DOCUMENT RESUME

ED 062 025 PS 005 655

AUTHOR	Stearns, Marian S.
TITLE	Report on Preschool Programs: The Effects of Preschool Programs on Disadvantaged Children and Their Families. Final Report.
INSTITUTION	Office of Child Development (DHEW), Washington, D.C.
PUB DATE	71
NOTE	195p.
EDRS PRICE	MF-$0.65 HC-$6.58
DESCRIPTORS	Behavior Change; Comparative Analysis; *Disadvantaged Youth; *Early Childhood; Early Childhood Education; Educational Finance; *Educational Programs; *Family Life; Federal Programs; Intellectual Development; Low Income Groups; *Preschool Education; Public Support; Reports; Research; Social Influences; State Programs

ABSTRACT

An examination of the written evidence of the effects of preschool programs on disadvantaged children and their families is presented. Hundreds of studies were reviewed to determine what kind of justification they provide for continued support of federal, state, and other publicly financed preschool programs. The Head Start and ESEA programs have been reaching about 530,000 children of low-income families or neighborhoods yearly. Two major state-supported programs in California and New York together involve about 30,000 children beyond those in Head Start and ESEA Programs. Findings include: (1) Public preschool programs have been successful in changing intellectual and social behavior of disadvantaged children in positive directions over the short run; (2) Uncertainty about effects on children's social and emotional development stems not only from the paucity of reliable measurement but also from lack of concensus about what constitutes positive change; and (3) Participation of the parents in workshops and meetings at preschool centers has not been shown to make reliable changes in parents' attitudes about themselves and their own situations, but measures almost always indicate positive feelings toward the preschool program and positive changes in attitude toward school. It has been concluded that these preschool programs promote growth and development in disadvantaged children and that such programs might be justified as models for research and reform. (Author/CK)

ED 062025

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

REPORT ON PRESCHOOL PROGRAMS:

The Effects of Preschool Programs On Disadvantaged Children and Their Families

Marian S. Stearns
Consultant in Educational Research
San Francisco, California

PS 005655

Final Report, Contract # HEW-OS-71-16

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Office of Child Development
1971

TABLE OF CONTENTS

Chapter 1 Introduction 1

- Purpose of the Report 1
- Boundaries of the Report 7
- Limitations of the Study 9

Chapter 2 Immediate Effects of Preschool Programs on Children 10

- General Intellectual Development 10
  - Some Cautions 10
  - Main Findings 13
    - Head Start 13
    - Compensatory Prekindergartens 16
    - Other Experimental Preschools 18
  - Further Observations 23
- Specific Cognitive Skills and Abilities 35
  - Language 35
  - Other Cognitive Skills and Abilities 45
- Social, Emotional, and Motivational Changes 55
  - Self-Concept 56
  - Social Behavior 60
  - Achievement Motivation 64

Chapter 3 Health and Nutrition 66

- Head Start Health Services 67
  - Medical and Dental Treatment 69
  - Preventive Measures 71
  - Community Change 76
  - Nutrition 81
  - Summary 85

Chapter 4 Effects on the Family 87

- Parent Involvement in Running Programs 89
- Parent Involvement as Staff 94
- Parent Participation and Direct Services to Families 100
  - Parent Participation 101
  - Direct Services to Families 104

Chapter 5 Continuity of Effects 114

- The Westinghouse Report 117
- Findings from Longitudinal Studies 134
  - Achievement Tests 134
  - Intelligence Tests 139
- Discussion 144

Chapter 6 Summary 159

- Purpose 159
- Findings 160
  - Immediate Effects on Cognitive, Social and Emotional Development 160

Health and Nutrition 163

Effects on Families 164

Continuity of Gains without Further Intervention 166

Discussion 168

References 176-190

CHAPTER ONE

INTRODUCTION

Purpose of the Report

This report, commissioned by the Office of Child Development, U.S. Department of Health, Education and Welfare, is an examination of the written evidence on the effects of preschool programs on disadvantaged children and their families. The findings were reviewed to determine whether they contribute to a justification for continued support of Head Start Title I (Elementary and Secondary Education Act) prekindergartens, state-supported prekindergartens, and similar government-funded preschool programs.

Project Head Start, part of the Community Action Program of the Office of Economic Opportunity (OEO),[1] began as one "Front" in the "War on Poverty" declared by President Lyndon B. Johnson. This community based program of education, health, nutritional and social services to poor children was an effort to "break the vicious cycle of poverty" by intervening in the lives of young children before they entered school.

---

[1] An agency created in 1954 by an Economic Opportunity Act of Congress and responsible directly to the President of the United States.

The idea of a child development program grew out of various trends and events in the United States during the 1960's: 1) theories of child development emphasizing the power of environmental influences, especially at early ages, in shaping intellectual and motivational patterns, 2) findings regarding depriving or disadvantageous environments, both physical and interpersonal in slums and poor rural homes throughout the country, 3) the push for civil rights of minority groups -- one of which was equal educational opportunity, 4) the changing focus on preventive rather than remedial programs in mental health and other areas, 5) ongoing experiments with educational programs for young children such as those of Martin Deutsch in economically depressed areas of New York City and Rupert Klaus and Susan Gray in rural Tennessee. The idea was to nip failure in the bud with a multi-faceted boost in a single generation. The child who thus got an equal start, physically, emotionally and intellectually, as he entered school would not be subject to failure, would not fall further and further behind his peers, would not drop out and become unemployable and thus would not bring up another generation in poverty.

As pediatrician Robert Cooke, Chairman of the panel which first outlined the Head Start program put it:

> There is considerable evidence that the early years of childhood are a most critical point in the poverty

> cycle. During these years, the creation of learning patterns, emotional development and the formation of individual expectations and aspirations take place at a very rapid pace. For the child of poverty, there are clearly observable deficiencies in those processes, which lay the foundation for a pattern of poverty, throughout the child's entire life.[1]

Intervention in these early years was called for, and thus Head Start began in the Summer of 1965.[2] Funds were provided by the Federal government directly to local communities -- usually independent Community Action Agencies or local school districts. Since that time about 2.9 million poor children, mostly 4 and 5 year olds have enrolled in Summer Head Start programs (8 weeks or so) and over 1.3 million in Full Year Head Start (usually school-year or up to 12 months) at about $325 million a year.[3]

Although Project Head Start is probably the most well known of the public preschool programs for disadvantaged children, the years since 1965 have seen the educational establishments in many states turn to kindergarten and prekindergartens as part of "compensatory education" for children of the poor. Since 1965, under Title I of the Elementary and Secondary Education Act (ESEA), the United States Office of Education has disbursed to the States about one billion dollars per year "to provide financial assistance to local educational agencies serving areas with concentrations of children from low income families" (to enable them) "to expand and improve their educational programs by various means which contribute particularly to meeting the special educational needs of educationally deprived children"[1]. Approximately $42 million per year of this Federal money has been used in the States to help support preschool programs. The general assumptions behind this expenditure are that a preschool program can 'compensate' for the educational disadvantages with which the child usually enters school and that later costs to society as well as to the children would be reduced by adding a "preventive" preschool experience.

---

[1] Quoted in Head Start--a community action program.

[2] It was planned, centrally staffed, and proposals were recruited, received, decided upon, and funded in communities all over the United States in less than 8 months' time. Thousands more proposals than expected were received and hundreds of thousands more children were enrolled than originally projected.

[3] Total budget for fiscal year 1970 was $326 million; for fiscal 1971 it was approximately $360 million. These figures include the Parent-Child Center program, the research and evaluation grants as well as career development and technical assistance. Federal funds spent on just the Head Start grantees alone during fiscal year 1971 were closer to $325 million.

In addition to Head Start and Title I, ESEA programs, public monies are spent for preschool programs under Title III of the Elementary and Secondary Education Act (for innovative educational programs)[2].

---

[1] Education of the Disadvantaged, p. 2.

[2] This still leaves out the amounts for day care under the Social Security Act. Although day care programs often enroll mostly preschool age children and the distinction is somewhat artificial, this report does not deal with the studies or the issues surrounding specifically day care programs. Nor does it deal with preschooling for handicapped children. While we are concerned here mainly with the effects of preschool classroom programs, there are also public funds being spent for alternatives to the classroom such as the original and popular Sesame Street.

Some cities and States have by themselves (or with help from private foundations) invested in early childhood education.[1] Many are planning new education programs for preschool-age children in general, as well as especially for children who are poor.

At the present time then, federal, state, and local jurisdictions are weighing the merits of preschool programs and educational day care programs for achieving various purposes and trying to decide how much to spend in what kinds of programs to achieve these ends. A review of what has been discovered about effects of early education programs already tried is an important part of the information needed for decisions about whether or in what ways to support preschool programs. This report covers evaluations of Head Start, of some state and city-wide prekindergarten programs and of some special, experimental early education programs. A large number of the studies included cannot be found in the usual literature sources on library shelves, but are unpublished special reports, informal professional papers, and reports of and to the United States Government.[2]

PS 005655

---

[1] Among the most prominent at the moment are: Appalachian Regional Commission, California, New York and the Ford, Carnegie, and Donner Foundations. Not included here are those states now experimenting with state-wide kindergarten education.

[2] Many can be obtained through ERIC--the Educational Resources Information Center. Numbers listed in their catalogue, Research In Education are given in Reference section of this report so that documents can be directly ordered from the ERIC Document Reproduction Service, 4936 Fairmont Av., Bethesda, Md. 20014. (301) 652-6334.

Because Head Start is the preschool program with the most comprehensive intervention in children's lives, the scope of effects covered in this report will therefore be guided by the scope of Head Start goals. According to Dr. Edward F. Zigler, Director of the Office of Child Development, where Project Head Start is now administered,[1] the goals were and are:

- --Improving the child's physical health and abilities
- --Encouraging self-confidence, spontaneity, curiosity and self-discipline
- --Increasing the child's capacity to relate positively to others, while strengthening his family's ability to relate positively to him and to understand his problems
- --Developing in the child and his family a responsible attitude toward society and creating opportunities for people to work together to improve social conditions
- --Helping the child and his family to an increased sense of dignity and self-worth.[2]

Although these goals do not emphasize the enhancement of the child's intellectual development this has always been a part of the Head Start program--though perhaps more so where the government's investment has been considered than at the actual Head Start centers where the children's activities are considered. Intellectual development--especially as related to later school achievement--is, of course, the major emphasis in compensatory education programs (e.g. Title I prekindergartens). Perhaps because they were most often evaluated from certain points of view (e.g. psychological or educational), the bulk of all the studies on preschool programs report effects on intellectual growth. And preschools' impact, even that of Head Start, has most frequently been measured and most often judged by Congress and the general public "as an attempt to prepare disadvantaged children for first grade and to bring them up to middle-class levels" (Smith & Bissell, 1970), or "to bring children from these backgrounds (hostile, different, indifferent, insufficient) up to a level where they can be reached by existing educational practices" (Gordon & Jablonsky 1967).

---

[1] In 1968 after controversy over whether the President would place Head Start under the U.S. Office of Education or the Children's Bureau, O.E.O. was instructed to delegate the program to this specially-created Office in the Department of Health, Education and Welfare, responsible to the Secretary.

[2] A paraphrase of the Cooke panel's stated goals for Head Start in Zigler (1970) p. 170.

The hope in the early days of Head Start and compensatory education was that preschool programs could arrest the "cumulative deficit" or "progressive retardation phenomenon" -- the fact that disadvantaged children fall farther and farther behind their age-mates with each year in school (Deutsch, 1963, 1964).

In addition to studies of intellectual growth and academic achievement, studies of effects on children in other domains listed by Zigler are reviewed in this report. And since Head Start was a comprehensive program, a part of the "War on Poverty", effects of all kinds, economic, social and psychological, on the families of the preschool children are at least considered.

Boundaries of the Report

The study is limited to the short-range and intermediate-range (several years) effects on young children and their families. The effects on the society as a whole, such as changes in educational goals and practices, changes in the distribution of educational expenditures, changes in racial attitude (changes in perceptions of poor children and their families) or changes in psychological theories of child development which have resulted from the preschool programs, are not treated, although they are undoubtedly among the more far reaching effects.

The report is not a direct evaluation of whether Title I prekindergartens, Project Head Start or other specific programs have achieved their educational goals, although discussions of this subject crop up in the report.

It is not a critical review of the adequacy of the studies done on preschool programs, although an attempt has been made not to base interpretations on studies with weak research designs.

The studies surveyed for the report are fairly recent, almost all since 1965, and are focused almost solely on programs for economically disadvantaged children. The report does not cover earlier studies on nursery and kindergarten education. These nursery school programs were primarily attended by middle-class children and emphasized getting along with other children in a group. Studies of these children's intellectual, personality and social growth generally did not reveal consistent differences between children who attended and those who did not. (Cf. Sears & Dowley, 1963; Swift, 1964). Federal early child-care efforts before and during World War II are also excluded from the report, although these programs in practice had a great deal of similarity to present efforts (Cf. Harned, 1968).

Studies with a principal focus on bilingual education, children's television, programmed learning or handicapped children were not systematically reviewed or included.

Limitations of the Study

The principal limitations of the study stem from the almost exclusive attention devoted to evaluation of effects on groups of children as a whole in diverse programs taken as a whole. While a focus on "overall", "general", or "average" effects is a legitimate one, it obscures the fact that there are great differences between groups of children in age, race, cultural milieu, economic level etc., which affect the impact of preschool experiences. It also tends to disregard individual differences of children in their rates of early development and in their responses to the preschool experience. Interpreting the overall effects of programs such as Head Start or Title I prekindergartens as a whole is also deceptive for, while preschool centers may be funded under the same laws, they can range from simple custodial care to sequenced academic lessons.

CHAPTER TWO

IMMEDIATE EFFECTS OF PRESCHOOL PROGRAMS ON CHILDREN

General Intellectual Development

Some Cautions

The overwhelming majority of studies done to determine whether intellectual growth occurred as a result of preschool programs have used at least one well-known, standardized intelligence test. In the studies which are methodologically most sound children have been measured before and after the treatment (preschool experience) and post-test scores or changes have been compared with norms of performance on that test or with groups that had a different treatment, usually an unspecified treatment such as "staying at home".[1]

Although it is difficult to advise on how each of the following factors should be weighed, there are certain qualifications to be kept in mind in interpreting performance on standardized intelligence tests.[2] One complication in interpreting the scores as measures of intellectual ability is that changes in willingness to try certain items on the test, rather than the child's actual knowledge about the item is reflected in his score. His IQ performance may be influenced by the familiarity of the situation, the rapport between the child and the tester, and the importance they both place on doing well. Not all experimenters have worked hard to keep the testing conditions similar at different times. But even for those who have, test scores will reflect familiarity with testing and perhaps learned motivation to do well. Although one would not call this component of an improved test score "intelligence", it may still be considered a worthwhile change.

---

[1] A very few of the studies in which comparisons were possible between children who attended and children who did not also had assigned the children to the two treatments at random. Others used children or groups matched in various characteristics.

[2] Much better discussions of this subject can be found in E. Gordon (1968), Zigler and Butterfield (1968) and Zimiles (1970).

Second is the problem of cultural bias reflected in the construction of the test. Even when we are dealing with English-speaking children, the assumptions, contained in the standard intelligence test items, that children have been exposed to the same general experiences are not valid. Children who do not perform well do not necessarily have less intellectual capacity but may only lack acquaintance with certain items common in a culturally main-stream American middle-class household. The test scores reflect certain experiential differences of the children which we would also not agree to call basic intellectual ability. One should then view the tests partly as measure of acculturation as well as intellectual ability and motivational states. A clear illustration of this is the outcome of an experiment at the University of Illinois. Young children were taught the answers to the items on the Stanford-Binet test. Their scores improved dramatically. But one would not want to maintain that a group without such experience was inherently incapable of such cognitive performance.

These factors do not mean that intelligence test scores are meaningless. IQ has meant something all along, even if not simple intellectual capacity; in groups of children there is a strong predictive relationship between IQ scores and later academic achievement test scores, grades and other ability measures. However, it has not been demonstrated that induced changes in IQ score are correlated with changes in achievement.

A final problem involved in interpreting changes from scores at one time to scores at a later time is the problem of regression to the mean. This refers to the fact that "for each class of pre-test scores, the corresponding mean post-test score lies closer to the overall population mean, post-test values being thereby lower in the case of high pre-test values and higher in the case of lower pre-test values."[1] Thus the groups of children with the very lowest scores at the beginning of the year may have seemed to improve a great deal more by the end of the year than their friends who did better on Test One. However, part of the improvement is not a change in the children's ability but a statistical and measurement artifact. Some would have scored a little bit higher even if they had not improved during the preschool program at all.

For the following section of the report, many evaluation studies were examined; only a few were chosen to illustrate the major findings on intellectual development. They were selected because they had sound research designs,[1] because they used several different measures of children's performance immediately after the preschool program and/or because in some cases they provide continuity to the report since they also measured longer-range effects.

---

[1] Campbell and Erlebacher, 1970, p.192

Main Findings

The majority of studies on short-range effects[2] show that, on standardized tests of intelligence or general abilities, children's performance improves as a result of the preschool program.

Head Start

Scores of studies from all over the nation comparing children who attended summer and full year Head Start programs and children in the same communities of comparable socioeconomic status who did not attend, give support to this conclusion. Most of the children in these samples ranged in IQ on the Stanford-Binet Intelligence Scale from the low 80's to the low 90's. The changes in IQ (or differences in post-test scores between groups) were usually less than 10 points and were most often smaller than half of the standard deviation from the mean.

[1] As Hawkridge et al. (1968) found in their search which uncovered 21 exemplary compensatory education programs out of 1000, "few, if any,... are free from blemishes of sampling, design, testing, data recording, or interpretation." p. 1.

[2] Also reviewed by Weikart (1967), Hodges and Spicker (1967), Miller (1968), Datta (1969) and Gray (1969).

Even when there were reliable, statistically significant changes, they were quite modest. The superiority of the Head Start children resulted from their passing only a few more items than the non-Head Start group. The practical significance of such gains is difficult to determine. For example, although Horowitz and Rosenfeld (1966) found that Head Start groups made substantial gains on the Peabody Picture Vocabulary Test, they stated that middle-class children one year younger were still better scorers than the disadvantaged children were after 8 weeks in a Head Start program. Although this is an exaggerated case, there were few exceptions[1] to the finding that children who participated in Head Start generally did not reach norms on the tests nor did they compare favorably with non-disadvantaged comparison groups.

Beller (1969), with a group of disadvantaged four year-old Negro children in a year long program in a North Philadelphia ghetto, employed three measures of general ability -- the Stanford-Binet, the Goodenough Draw-A-Man Test and the Peabody Picture Vocabulary Test. The trends of the scores on all three of these tests were alike and were consistent with our general conclusion above, although the absolute values were somewhat different for each test.

On the Stanford-Binet, the children had mean IQ scores of about 90 before and 95 after the preschool experience, while the control groups did not change. On the Goodenough Draw-A-Man Test, a nonverbal measure based on a drawing of the human figure, the children

[1] Alexander (1968), see also Datta (1969).

were practically at the national average of 100 when they began (around 97) and the score immediately following the preschool program was not significantly different. On the Peabody Picture Vocabulary Test, in which the child must point at the picture which illustrates what the tester has just said, the mean scores of the children before preschool were between 74 and 80. PPVT scores after preschool were 10 points higher in the experimental groups (39 children) while the groups without a preschool program remained the same.

The chief methodological problem which makes it difficult to say anything more than that most Head Start programs probably made some small favorable differences in the level of intellectual functioning is the sampling problem. First, Head Start itself is so heterogeneous[1] that results from any group of studies that does not include almost all Head Start classes (in the thousands) runs the risk of not being representative. Conclusions drawn from such samples obviously do not tell us about Head Start as a whole. Furthermore, since Head Start was a service program designed to serve all eligible poor children, it had recruiting practices which made it the farthest thing from a suitable design for testing differences between children who did participate and those who did not. Constituting comparable groups of children so that differences could be attributed to the preschool program and not other factors has proved extremely tricky.

1 See Datta (1969), p. 7.

For example, Sontag, Sella, and Thorndike (1969) from the New York City Head Start Evaluation and Research Center compared a group of children who had just completed 6-7 months in a Head Start program with a matched group of children of the same age who were about to enter the Head Start program at the same centers (having been recruited by the same procedures). The scores of the two groups on the Stanford-Binet were 100.16 for past Head Starters and 96.07 for those entering the program. If we assumed that the two groups were equated in such an inventive design we would conclude that the difference was due to the Head Start experience. The actual differences between groups in this case was not statistically significant on the Stanford-Binet although there was a significant difference on the Preschool Inventory.[1]

Compensatory Prekindergartens

Much less systematic and generally much less rigorous than Head Start evaluations were studies of public school early education programs for disadvantaged children. Prekindergarten and kindergarten classes conducted as part of school systems' compensatory education program seem to have produced about the same order of measured changes in general intellectual ability as Head Start. It is, of course, very difficult to be certain about this. Neither all Head Start nor all

[1] Bettye Caldwell and Donald Soule prepared the manual for the Preschool Inventory (PSI). The test contains items on ability to follow instructions, understanding of size, weight, shape and position concepts, as well as general information items. Unlike the Stanford-Binet Intelligence Scale it was designed to be especially sensitive to changes likely to occur with a preschool experience.

compensatory preschool programs were evaluated. While reports on the Head Start program are available, it is difficult to collect most of the evaluation reports on preschools sponsored by the various cities, counties, and states which had compensatory programs. In addition, it is likely that favorable reports showing that children benefited from compensatory early education programs are more available than unfavorable reports. Nevertheless it appears that these preschool programs had positive influence on general intellectual ability scores.

Oakland (1969) children in a special program gained between 5 and 10 points on the Pictorial Test of Intelligence and were in the low 90's at kindergarten entrance age. Comparison children were still in the low 80's.

Although the Los Angeles Unified School District did not have a control group of children without prekindergarten programs during the 1969-70 school year, the 729 children who participated showed a change on the Preschool Inventory from a mean of 36.3 to 63.5 (Los Angeles, ESEA Title I 1970). We can agree with the conclusion in the report that it is not likely that a comparable group without the special program would have gained as much.

The Fresno, California prekindergarten was the only public preschool program to be identified by Hawkridge et al.(1968) in their first attempt to identify compensatory education programs in the nation which could demonstrate significant improvement in children's performance.

And it showed positive changes above the general range found in public compensatory preschools. Mean gains of the several hundred experimental children in Fresno on the PPVT was about 15 points which was a change of a full standard deviation. This brought the children to a mean of 100, the norm on the test.

In New York State, an experimental prekindergarten program planned by DiLorenzo (1969) in the State Department of Education included eight school districts and 1,800 children. One general finding was that "disadvantaged children who were in prekindergarten (experimental) out-performed the disadvantaged children who did not attend (control) on ... intelligence (94.16 vs. 89.46)... as measured by the Stanford-Binet Intelligence Scale..." (p. 0-3 and V-6). However, DiLorenzo several times made the point that while experimental groups gained in intellectual ability over control groups, the distance still to go to the norm was greater than the experimental group had already come. And while the gap between disadvantaged children who had attended preschool and non-disadvantaged children who had not attended preschool was narrowed, the gap between disadvantaged and non-disadvantaged children who both had attended preschool was not.

Other Experimental Preschools

The preschool programs which have had the most substantial immediate effects on the mental ability of young children are those which have been part of fairly small-scale research programs. These research projects, mostly located at universities and supported by funds from private foundations and the Federal government, were often set up originally to study how certain environmental factors influence various behaviors in young children or to design and evaluate teaching practices and curricula for very young children that would enhance their cognitive and emotional development.

Several of the early programs (e.g. Gray & Klaus, 1965; Deutsch, 1965) served as inspiration for Head Start and other compensatory preschool programs and developed some of the theory and practices from which these later, larger efforts drew up their programs. While some of these early research programs reported modest gains in intellectual ability, later efforts of theirs and others have demonstrated large gains.

One early research study (not University-based), conducted as an experimental compensatory prekindergarten program for groups of very low IQ Negroes in the Ypsilanti (Michigan) public school system, was the Perry Preschool Project (Weikart, 1967). In the early 60's when the program began, children in the experimental groups sometimes gained ten points on the Stanford-Binet Intelligence Scale by the age of 5, after two preschool years (morning classes, weekly afternoon home visits from the age of 3). Even at that, the differences between experimental and control groups of children were often not significant at the beginning of kindergarten. In recent years, using any one of several preschool curricula, Weikart (1970) has obtained mean IQ gains in his groups ranging from 12 to 30 points (where the standard deviation in these groups is usually less than 10 points). Several groups since 1965 have gained more than 25 points in IQ on the Stanford-Binet in the two-year period, moving from IQ scores in the high 70's and low 80's to the norm or above.[1] On the average, the groups without preschool experience gain less than 10 points on the Stanford-Binet in the same two year period, beginning kindergarten with scores in the low 80's.[2]

Scores on the Leiter International Performance Scale (Weikart et al.1970) are difficult to interpret, since the experimental group was superior to the control by 10 points at age three, before the preschool intervention began. The scores on the Peabody Picture Vocabulary Test showed a 14-point gain from 67 to 81.4 for the experimental subjects while the control group maintained the same score throughout the two years.

Several other projects showed similarly dramatic effects due to preschool programs of various kinds for a year or two before kindergarten or first grade. Karnes (1969) in a prekindergarten program for a racially-mixed group of 4 year-olds with varying IQ levels, reported a nearly 14-point mean gain score for the 24 children in her Ameliorative Preschool program at the University of Illinois, Urbana. This gain was

[1] Unpublished data analysis, personal communication. Dr. Weikart is now director of the High Scope Educational Research Foundation, Ypsilanti, Michigan.

[2] Weikart et al., (1970) p. 67.

significantly greater than comparable children evidenced in several community and private nursery programs. The children from the Ameliorative Preschool had a mean Stanford-Binet IQ score of 110 before they entered public kindergarten. In the same study, Karnes (1969) also reported a 19-point Stanford-Binet IQ gain for a two-year, pre-first-grade curriculum designed by Bereiter and Engelmann.[1] These children, in a group comparable to the others in the Karnes study, achieved a mean IQ score of 113.6 at the end of the two-year preschool program and also exceeded the progress of children in kindergarten who had been in the four prekindergarten-only programs (Karnes p. 106).

Kraft, Fuschillo, and Herzog reported on a traditional nursery-school-type program for Negro innercity children in Washington, D.C. After two years in this program the children had gained nearly 15 points on the Stanford-Binet test, bringing the mean score to 97.4 while the mean performance of the comparable group who remained at home rose only from 84.6 to 88.7.

H. A. Sprigle's Learning-to-Learn program with five year-old low income Negro children in Florida demonstrated that after its 9-month preschool curriculum, the 24 children had a mean Stanford-Binet IQ of 104.12 while the group of 24 children who remained at home before first grade had a mean IQ score of 83.29 (Van de Riet, Van de Riet & Sprigle, 1968). In Sprigle's program factual knowledge taught was incidental to learning habits of perception and cognitive skills. With a group of 4 year-olds who started with IQ scores in the high 80's, IQ scores of 107.36 and 86.55 were found for the Learning-to-Learn group and the regular nursery control group respectively in the first year and 108.55 and 93.45 at the end of the kindergarten year. (Van de Riet, Van de Riet and Resnick, 1970).

---

[1] For description of curriculum see Bereiter, C., and Englemann, S., (1966).

Hodges, McCandless and Spicker (1967) devised a curriculum based on a diagnosis of each child's areas of best and poorest performance in language perception and motor coordination. The 42 children, mostly Appalachian white 5 year-olds from small communities, started with a mean Stanford-Binet IQ score of 73.57 and finished with a mean IQ score of 90.38, a gain of more than 16 points. The 42 children who remained at home, rather than attending the experimental program before first grade, changed a little more than 4 points, from 74.18 to 78.27. On the California Test of Mental Maturity the gain of the preschoolers was more than ten points while the control group changed less than one point.

The list of exemplary programs which have brought about substantial changes could be expanded, but those described illustrate the nature of the gains which can be accomplished in well-designed, carefully planned, expertly staffed preschool programs. To recapitulate the section on major findings:

1. Disadvantaged children who attend formal preschool programs show greater measured increases on standardized intelligence test scores than comparable children who do not attend.

2. We cannot determine how much of that change represents development of intellectual capability and how much represents other factors, e.g. learning to take tests, greater self-confidence, familiarity with different adults, etc.

3. Large-scale public programs have generally produced smaller changes in measured intellectual ability, on the average than have smaller, well-designed and expertly staffed programs. In the former low-income children are still at a disadvantage intellectually compared with the average child (as defined by test norms). In the latter substantial gains, in some cases enough to close the gap between disadvantaged and the "average" child have been obtained.

Further Observations

Some further generalizations about immediate effects of preschool programs on measured intellectual abilities of disadvantaged children can be extracted from the various studies.

1. As far as amount of immediate change in intellectual performance is concerned, the time in the individual's early life at which the preschool experience occurs, at least between 2 and 6 years of age, does not appear to be crucial. That is, at least at our present level of sophistication in educational intervention, we can substantially increase the level of general intellectual performance in children at any time between two and six years of age.

Schaefer (1971) in a home-tutoring program for disadvantaged youngsters starting before 2 years of age, obtained Stanford-Binet IQ changes from 90 to 106. Palmer (1968) also worked with groups of two year-olds and was able to accelerate IQ changes in the experimental group relative to the control group. Karnes et al. (1970) in a study with children less than two years old, raised the mean IQ (through their mothers' teaching) 16 points. In another study with four year-olds, the IQ increased 14 points. Weikart (1967) summarized a group of studies he reviewed on the subject of formal schooling as follows:

> For all groups, except those in big city slums, attending school produces an improved growth rate whether the attendance is at three years of age in the Perry Project experimental group or six years of age as in Kirk's (1958) community contrast group. It is suggested that the rate of growth is a product of the program experienced rather than the timing of the experience (p. 154).

It is the kind of experience, its appropriateness to the child's present intellectual level, which is important in determining rate of change. The period of time is more related to the nature of the changes. And as Schaefer (1969) points out, this is reflected in changes in the content of mental tests, for example, from more sensory-motor items to more language items on tests for children between 18 and 36 months of age. But it appears that acceleration of change has been as likely at 5 and 6 as it has at 2, 3 and 4.

2. The size of the increase in IQ is not a simple function of the length of time in the preschool.

Often two years of preschool do not yield a higher IQ score than a single year. For Klaus and Gray (1968) and for Beller (1969) it did not make any difference in terms of IQ scores at school entrance whether children attended one or two years of a preschool program.

Weikert (1967) found that the IQ scores for most of the groups he studied dropped during the second year of the Perry preschool program. The evidence from Head Start evaluations (Datta, 1969) does not show clearly that full year programs yield greater intellectual growth than summer programs.

On the other hand, Bereiter and Engelmann found in their program that children show substantial gains in IQ during the second year of preschool. Also, Sprigle's (Van de Riet et al. 1970) Learning-to-Learn program with its main emphasis on preception and learning sequences sometimes yields IQ increases in the second year. Children who spent two years (kindergarten and first grade) in the program had superior IQ scores to children who spent only one, and children who had nursery school and kindergarten did better than those who had only kindergarten. These findings remind us that it is not the amount of exposure time per se, but rather the experiences occurring during that time which stimulate intellectual growth. It may not be the length of the preschool program itself but the length of time spent with individual children which is related to their IQ increase.

A recent study by Herzog and others[1] adds another complicating factor. Children in a Washington, D.C. preschool showed intellectual improvement at different times during a two-year program, the most disadvantaged boys showing improvement last. Their growth did not begin until the second year of preschool, a year after the girls, especially those not quite so poor, had shown IQ increases.

---

[1] Unpublished manuscript submitted to Office of Child Development, HEW, 1971.

3. Some preschool programs for disadvantaged children are more effective than others in raising IQ. The more a program is well-formulated, well-organized and focused on intellectual attainment and language skills, the greater are the changes in children's intelligence test performance.

A brief review of the studies which have demonstrated this point and given meaning to the terms "well-formulated" and "well-organized" is all that can be included here. The scope of the present report is to analyze the effects of preschool programs for their bearing on the justification of public support. Review of characteristics required to make a program more effective in changing intellectual performance is important here, then, only to decide if it is feasible to incorporate these characteristics in large-scale, publically-sponsored programs.[1]

---

[1] Two, much more detailed papers on the subject of which programs are effective and for whom, are in preparation. One by James O. Miller, to be issued in May, includes the most comprehensive bibliography available on preschool programs. Another by Joan S. Bissell, deals with subject and treatment interactions. There is also, on this question, the study "Planned Variations" in Head Start, now being evaluated by the Stanford Research Institute, Menlo Park, California. In this program several specific "model" early education programs are being evaluated and compared, each in a number of communities.

Quite a few studies have been carried out in which an experimental preschool program has been compared to a traditional nursery or kindergarten program. The aims of traditional nursery school programs, included in a review by Sears and Dowley (1963) were: 1) establishing routine habits, 2) learning motor skills and confidences 3) developing manipulatory skills, 4) learning control and restraint, 5) developing appropriate behavior toward adults, other children and appropriate reactions to own feelings, 6) psycho-sexual development, 7) language development and 8) intellectual development. Teachers paid careful attention to the needs of the child and guided the classroom activities according to the perceived needs and emotional states of the children. Incidentally, with slightly more emphasis on promoting self-confidence and other effective and motivational states, this serves also as a description of the Head Start Child Development programs (not including health and other services).

As we saw earlier, in the New York State prekindergarten study, DiLorenzo (1969) reported that disadvantaged children who attended the prekindergarten program outperformed the disadvantaged children who did not. He also concluded that "these results were achieved only by cognitive-oriented programs and not by nursery or early childhood oriented programs" (p. 0-2). The two-way classification DiLorenzo used to describe the eight school districts' programs was based on observations in the classrooms. One characteristic detectable by the Observation

Schedule, which differentiated among classrooms, DiLorenzo called "structured." The specificity of the instructional goals the teacher was judged to have, the amount of focus on those goals in the classroom, and the degree to which the teacher directed the focus all were involved in "structure." The other major characteristic which was thought to be meaningful was labeled "cognitive-language orientation." Programs were rated low on this factor if "language development is incidental to a general enriched experience program" and high if "the teacher gives the children controlled practice in the use of selected terms and concepts in order to establish specified language patterns" (pp. III-5 & III-6). Programs which were low on structure and cognitive-language orientation were the ones in which the children attending did no better on the IQ test at the end than children who stayed home. In the two districts lowest on these characteristics, the children in the prekindergarten program showed a decrease in mean IQ, as did their control group.

The post-test results of Sprigle's sequenced Learning-to-Learn program were compared not only with results of comparable disadvantaged children who remained at home but also with a comparable group of children who attended a traditional nursery school. Kohlberg (1967) compared a Montessori program with a traditional nursery program, Karnes (1968) compared the Ameliorative program with a traditional nursery, and Hodges, McCandless and Spicker (1967) compared the results of their Diagnostic Curriculum with the results of a traditional program, as well as with no program. The general finding of these studies was that children in the experimental groups got higher than post-test IQ scores than traditional nursery school groups and the traditional groups got higher scores than children remaining at home.

To explain findings such as these at first several investigators posited a factor called "structure." Definitions of this ranged from "mostly teacher-directed activities" to "specificity of educational objectives" to "amount of orderliness in the classroom."

In one careful investigation, Karnes (1969) defined structure as "the nature of the teacher-child interaction: as the specificity and intensity of this interaction increases, so does the degree of structure" (p. 7).

> Two programs (traditional and Community-Integrated) represented the less structured end of the continuum; a third (Montessori) embodied an established theory which includes much that can be identified with a child-centered or traditional approach and a methodology which incorporates considerable structure; the fourth (Ameliorative) and the fifth (Direct-Verbal, otherwise known as Bereiter-Englemann) programs fell at the highly structured end of the curriculum (p. 7).

The results of IQ testing at the end of the preschool period did not confirm that the dimension of structure was related in a linear way to IQ change. The order on the Stanford-Binet post-test, from highest to lowest was Ameliorative, Direct-Verbal, Traditional, Montessori, Community-Integrated. The study also indicated that for some measures of intellectual growth, all programs were equally effective (PPVT scores did not differ significantly among the five).

While "structure" as so defined could not explain all the findings, some relationship was apparent. There was, however, a more complex relationship between measured intellectual growth and preschool experience than a simple dimension labeled structure could explain. The children were differently affected by these five programs, as we shall see in more detail later.

Recent observers of preschool classrooms have begun to break down the "structure" concept into reliably measured factors such as "Teacher Directed Activity vs. Pupil Selected Activity", "Narrow vs. Broad Focus in Teachings", "Highly Focused Learning Tasks", "Pupil Free to Withdraw" etc. (Soar 1971).

Weikart (1969), in an attempt to discover the critical differences among curricula, controlled as much as possible for pupil/teacher ratio, program schedules and operations, staffing arrangements, and that most-difficult-of-all-commitment to a belief in potential impact of their methods by the teachers--in a study of three preschool programs. Weikart described the three different curricula as follows:

> a) a unit-based curriculum emphasizing the social-emotional development goals of the traditional nursery school programs. The hallmarks...are acquainting the child with the wider environment, close attention to the individual social and emotional needs of each child, and a considerable degree of permissiveness in classroom operation.

> b) a cognitively-oriented curriculum developed over the last five years by the Ypsilanti Perry Preschool Project. This is a carefully structured program... based on methods of "verbal bombardment," socio-dramatic play and certain principles derived from Piaget's theory of intellectual development.
>
> c) a language training curriculum emphasizing learning of academic skills...developed by Bereiter and Engelmann (1966)...It is a task-oriented curriculum employing many techniques from foreign-language training and includes the teaching of arithmetic and reading (p. 4).

Weikart found with both 3 and 4 year-olds that there were no significant post-test differences among the groups on either the Stanford-Binet, where all groups showed between 17 and 30 IQ points gain, the Leiter International Performance Scale or the Peabody Picture Vocabulary Test. The experiment has now been repeated three times by Weikart and has consistently produced mean gains of between 12 and 30 points on the Stanford-Binet Intelligence Scale for all three groups, bringing these once "functionally retarded" youngsters to the norm on the tests or above. Curriculum type did not have a crucial influence on outcome. Whatever the characteristics which make preschool programs highly effective in raising IQ, at least in the short run, all three preschool programs had them in common.

Among these commonalities (paraphrased from Weikart, 1970), those which were crucial still have not been identified.

1. Each of the three curricula had a clear rationale or set of principles which made sense to the teacher and provided a framework for classroom operation. Each model helped teachers select activities which were appropriate to specific goals for the children's performance.

2. In each of the three preschool programs, teachers planned together both for the week's lessons and for daily review and revision. Two teachers were assigned to each classroom and provided support for one another.

3. Perhaps primarily because teachers were aware of their part in a research project, they were highly involved and committed to the effort and spent extra time on their own preparing the classroom program. The staff expectations of the children were uniformly high.

4. Each team of teachers was supervised by an experienced teacher who referred problems and kept planning sessions focused on the application of the model classroom activities.

5. There was a great deal of communication among all the staff and respect among individuals in all roles working in the project.

6. Home visits in which the mother was involved actively with the preschool education of her child was a part of all three programs.

7. Each week, primarily because of her home visit responsibility, the teacher focused on the learning needs of each child exclusively for a period of time.

8. In all classes, there was heavy use of language in the classroom by the adults, and children were all encouraged to develop language skills.

While Weikart puts a great deal of emphasis on what he calls the "staffing model" (i.e. 2 and 4 above), other investigators as well as many popular writers have recently emphasized Hawthorne and Rosenthal effects[1] (3 and 5 above). It is not clear how these latter factors have their effect on the children. In addition, these effects are difficult to bring about and maintain in an ongoing program. While effective staffing patterns and relationships are difficult, they are something we know how to implement systematically.

As for the mothers' involvement (6) contributing to positive IQ gains, there are several studies (see Chapter Four) which clearly show that intensive parental participation can bring about greater intellectual changes in preschool children than little or no participation.

The individualization of the curricula and the amount of time the adult spends with the children individually (7), has been given little research attention. But the work of Blank and Solomon, Palmer, Schaeffer, Karnes and Hodges, et al., make it appear that this was an important factor in creating such large IQ changes.

Most consistently endorsed by all investigators is the heavy emphasis on language (8). However, even if all the characteristics listed above were seen as necessary for an effective program, this does not distinguish between those, like Weikart's which yield an immediate and dramatic increase in IQ performance and those which do not. Glen Nimnicht's (1970) very popular program at the Far West Regional Laboratory and Elizabeth Gilkeson's program (Biber, 1970) at the Bank Street College of Education share all of these characteristics and yet generally do not yield great immediate IQ gains.

---

[1] The "Hawthorne effect" refers to the better performance which results simply from people being aware that special attention is being directed at them as part of an innovation or experiment. People do a better job when they feel they are being watched or tested. The "Rosenthal effect" refers to a finding (Rosenthal and Jacobson, 1968) that children's achievement shows a dramatic rise when their teachers have been told to watch for a growth spurt, i.e. when teachers' expectations for the children are high.

Several investigators (Katz, 1970; Bissell, 1970; Chittenden, Tanaka and Bussis, 1970) have tried to devise better descriptive dimensions for preschool programs by means of which comparisons could be made and the more influential program characteristics identified. Soar (1971) has indicated that these characteristics will be complicated to sort out. He found in one study, for example, an interaction between the kind of material to be learned and the method used to teach, such that the more concrete lessons were better retained over the short run if taught quite directly, but more abstract concepts were less well learned by rote and were better retained with the indirect teaching or discovery methods.

Since Weikart suggests that to maximize IQ gain one must concentrate fairly narrowly and intensively on educational goals, and since the Bereiter and Engelmann program can continue to accelerate IQ through two years of preschool, there is some evidence that the closer the curriculum is to the kind of content on the intelligence tests, the more likely an immediate apparent effect on sheer level of intellectual functioning measured in the children at the end of the preschool period. We will see later whether programs which promote rapid gains in intelligence test scores also promote sustained growth. In the section following this one we will not concentrate so heavily on how much change occurs but rather on what kinds of changes occur.

Specific Cognitive Skills and Abilities

Language

Besides the obvious problem that some poor children have a language other than English spoken in the home, disadvantaged children in general tend to exhibit less complex sentence structures, less use of "as - if" qualifiers, smaller vocabularies, are less likely to use words to relate thoughts and feelings, and are less able to express themselves verbally in a preschool setting.[1] Some of this may be due to the children having learned non-standard grammar, some to language having functioned differently for the children at home, and some to children's unwillingness to speak out in strange situations. In any case, because of the immediately noticeable differences (in kind and quantity) between the language of most disadvantaged 4 and 5 year-olds and the language either possessed by advantaged, same-aged children or required for adequate performance in school, most preschools for poor children have included general language development as a goal. This is practically the only specific goal related to intellectual development which programs generally share. And even at that, because of various notions of what "different" language abilities mean, anything from simply promoting comprehension of the teacher to enabling the child to express full sentences in logical sequences can be considered the objective. The activities to promote "language development" have ranged from simulating a highly-verbal, middle-class home situation to formal practice drills on different types of grammatical sentences.

---

[1] There are linguists (Cf. especially Labov, 1969) who argue convincingly that language differences, for example those between inner-city whites and Negroes, do not signal language deficiencies. Each language is complete and functional in its natural context for the group which employs it. The fact that the disadvantaged inner-city Negro youngster does not exhibit standard middle-class English is obviously the result of the fact that he was not raised in that language. That he may not even exhibit much of his own grammatically-sound language in the preschool classroom situation results from social context differences, social discrimination or other factors. For most preschool programs the assumption is that it is important for a child to acquire standard English. Some encourage all language in order to reinforce language usage, to buttress children's self-concepts and to encourage feelings of acceptance, trust and comfort in the preschool setting. Others work immediately on standard English lessons. While the differences in language are not always viewed as signalling underlying deficiencies in the thought processes of the non-standard speakers, learning standard English is, for various reasons, a nearly universal goal of preschool programs.

Even with all this variation, disadvantaged children in most preschool programs have showed language improvement, at least on the Peabody Picture Vocabulary Test, a measure of receptive language ability or comprehension (which was also considered one aspect of general intellectual ability as discussed earlier).

Again, caution must be exercised in the interpretation of immediate effects on language ability as represented by changes in test scores. There is the possibility that children come to trust enough in the preschool situation to use the verbal skills they already possess. In some programs this would be considered adequate success.

However, it is usually found that the more a program emphasizes language, the more likely children are to show gains over control groups on tests of language development. This rule can be applied more generally to all perceptual and learning skills. That is, the patterns of improvement in most specific cognitive skills tend to reflect the pattern of goals which are consciously incorporated in the preschool program. While this is the general tendency--for the results to pattern themselves after the stated goals--the amount of change demonstrated in any specific skill area depends on: 1) the explicitness of the goals in terms of performance expected of the children, 2) the degree to which the method designed to achieve these goals with children is sound (i.e. is congruent with principles of child development, has been empirically tested, and is appropriate to the particular children involved), 3) the relative amount of time spent on the goal and the fidelity with which the methods are implemented, and 4) the degree to which the test performance required to demonstrate effects is similar to the activity during training. The reason for failure of a preschool program to change the mean performance level of specific skills or abilities on a test, therefore, can be due to lack of one or several of these conditions and can be extremely difficult to determine.

A good illustration of the functioning of these factors is Merle Karnes' (1969) comparison of the five different preschool curricula on three subtests of the Illinois Test of Psycholinguistic Abilities (ITPA). The ITPA contains nine subtests, each of which measures specific conceptual and linguistic skills. Three subtests are all measures of children's ability to express themselves verbally--the language skills on which disadvantaged children usually perform relatively poorest.

> The Ameliorative program emphasized the acquisition of specific verbal skills, and learning activities were structured to emphasize the co-relation of cognitive and language development. Teachers incorporated into their lesson planning the various facets of the language process as embodied in the Illinois Test of Psycholinguistic Abilities and adjusted their teaching strategy to the test-one ITPA profiles of individual children.
>
> In contrast, the Direct Verbal (Bereiter-Engelmann) curriculum did not include specific language skills because of their relation to the language model of the ITPA but because they met the logical criteria of the minimum essentials for language competence. (Children began by learning basic identity statement applied to familiar objects: "This is a ________." "This is not a _______." Then plurals, polar sets, tense changes and other pattern drills were introduced).
>
> The opportunities for language development in the Traditional program occurred in more general ways, specifically in quasi-structured activities such as show and tell, circle time, music, and in spontaneous situations arising from play.

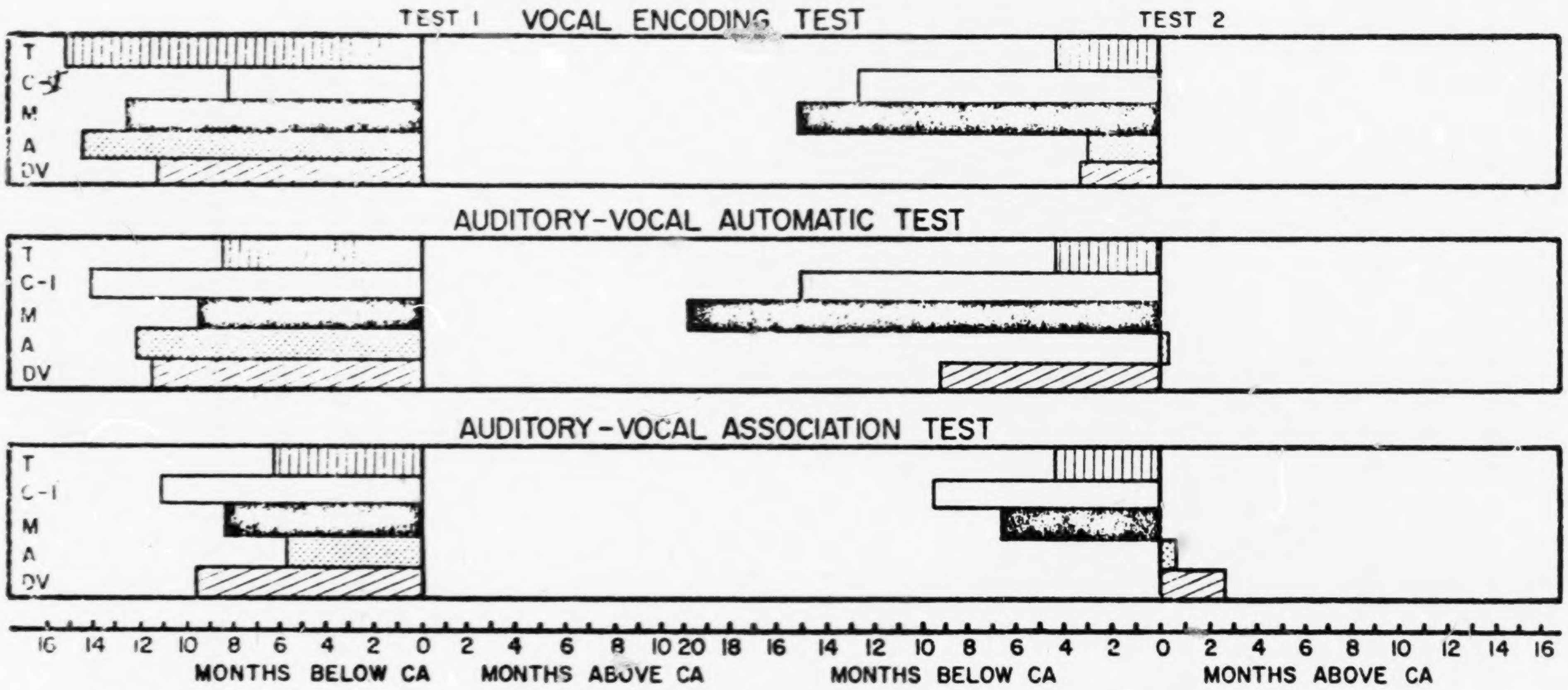
> Situations affecting language development in the Community Integrated program were similar to those operating within the Traditional group but were most obviously altered by the introduction of peer language models from an advantaged segment of the population. (However, it was clear that disadvantaged children always deferred to advantaged children when it came to actual verbal performance).
>
> Finally, the Montessori program focused on Motor-sensory learning as the basic mode in which conceptual and linguistic abilities occur, following the pattern of the child's sensorial development (p. 67-88).

The pattern of scores reflects the skills actually practised by the children in the classroom. Children in the Ameliorative group, given practice on all subtest skills, especially those in which their weaknesses were noted to be greatest (on the first test), got the highest scores on the three verbal expression subtests. The Community Integrated group improved very little or actually lost on some subtests. The children in the Montessori group also regressed rather than gained in some skills. The only exception to the pattern which might have been expected was that the Direct Verbal group, after much oral drill on grammatically correct sentences did not do well on the Auditory-Vocal Automatic subtest where they were to add a linguistically appropriate word form to a sentence describing a picture after a tester had given an example: "This is an apple. These are two __________."[1]

---

[1] Several instances in which the Bereiter-Engelmann approach was used and failed to yield expected patterns of language skill development can be cited, including one study by Bereiter (1967) himself. But explanations for these results in studies by Rusk (1967) and Adkins and Reid (1967) are difficult to find.

FIGURE 1. Means[1] for the three ITPA Subtests in which five Groups demonstrated the greatest initial deficit.



[1] Means were based on a "difference score" designed to compensate for slight variations in the initial mean chronological age for the groups and slight variations in test intervals. Each child's chronological age at the time of testing was subtracted from his language score, so a child 48 months old who received a language age score of 40 on the subtest would be given a "difference score" of -8, indicating a deficit of eight months on that subtest.

From Karnes (1969), p. 75

Language development is an area for which there has arisen a diverse educational technology to bring about changes in performance. While there have not been direct, controlled studies comparing "verbal bombardment", "drill" and "ameliorative-diagnostic" approaches or methods differing along any specified dimension, several language curricula have been found moderately successful.

In a study comparing the University of Hawaii Preschool Language Curriculum with a general enrichment curriculum in eight Hawaiian Head Start classrooms, Herman and Adkins (1970) reported that "major results of the study were the significantly superior performance of children exposed to the language curriculum...on the Stanford-Binet, Preschool Inventory, the Verbal Expression and Auditory Association subtests of the ITPA (revised) as well as the total of eight ITPA subtests and the number of descriptive categories included in responses on (the) Verbal Expression" subtest. The University of Hawaii Preschool Language curriculum was similar to the Bereiter-Engelmann program and used a short period of direct training with children in small groups every day. Lessons were on labeling, verbs, plurals, tenses, pronouns, adjectives, conjunctions, etc., and the children were drilled to used them in complete sentences.

In a study comparing three Mexican-American and Negro Head Start groups given either of two different and very specific daily language-lesson sequences or a song-and-games session, Edwards and

Stern (1969) reported significant superiority for the two language-supplement groups on the Preschool Inventory, the Visual Discrimination Inventory and several subtests of a curriculum-related UCLA Language Battery. There were no significant differences among groups on the Peabody Picture Vocabulary Test. Although the two special language curricula differed very little in content, there were a few statistically significant differences in their outcomes. The groups given daily 15-minute lessons in which language responses were used in the context of solving problems and performing intellectual tasks, as well as in simple color and number labeling (UCLA Preschool Language Program) performed a little better on the Preschool Inventory. The groups given a daily 15-minute version of the Sullivan (BRL) Readiness for Language Arts program in which children learned, through stories, to identify colors and letters, performed better on the Visual Discrimination Inventory which tests perceptual ability, including ability to discriminate abstract figures and letter-like forms.

A closer examination of results such as Bereiter and Engelmann, Herman and Adkins or Edwards and Stern have obtained point up one reason why such specific language curricula are not employed on a large scale in preschool programs. To obtain even a statistically significant improvement over the regular preschool program, in terms of increasing the ability of children to use whole declarative sentences and their negation etc., requires much time, regular attention and small groups of children. The goals of the teachers in just the language area are usually so numerous and so broad that specialized curricula are seen as limited. And attention to such curricula requires that less priority for attention be given to other cognitive skills or goals in the social and emotional domain, or goals in health, family relations and other domains. Therefore, while there are language teaching technologies, developed perhaps more fully than other areas, they are not simple and they do not remove the considerable language differences between advantaged and disadvantaged children.

Several examples of effective programs for development of particular language skills can be listed, and it appears that the technology could be applied in large-scale prekindergarten programs. That it rarely is may reflect more the varying nature of the chosen goals in large-scale programs than on any failure to implement language development techniques.

Programs such as Head Start and state-wide compensatory prekindergarten programs either have no prescribed goals in specific skill areas or they place priority on health, well-being, emotional security, pride and independence. When goals beyond such broad areas as "intellectual growth", "physical development" and "self-confidence" are specified, often such specific abilities as telling a coordinate story or describing one's surroundings are assumed to come easily if the child is secure in the preschool situation, feels confident and trusts the teacher.

Individual centers are almost always free to plan their own programs around specific skills of their own choosing or general activities to foster the general goals. It would obviously not be appropriate to apply a single verbal expressive ability test to children in all Head Start or all Title I-supported prekindergarten programs. Although we have found a slight improvement on measures of general intellectual ability and general language development results from attendance in a wide variety of preschools, it is unlikely that we could measure positive change in any further-differentiated language skills.

Other Cognitive Skills and Abilities

What is true of specific language skills is true of all other intellectual skills and abilities. One can say little about the effects of Head Start, of Title I or of any such grossly classified preschool programs, in general, on particular intellectual skills or particular intellectual processes, since different preschool programs aim to promote different things in young children. Nor is there agreement on what constitutes a valid instrument or set of tests to measure the important specific cognitive skills and abilities. The basic problems here lie deep in different theories of child development on which preschool programs are roughly based and in different notions of where the problems of disadvantaged children lie (i.e. in the child, in his home life, in the school and society in which he must operate, or in all of the above).

While there is little agreement on what should be the outcome of preschool programs in general, there are several well-known general preschool curricula which have produced specificity of effects in some skill areas. For example, where there is much concentration on perceptual development and on self-discipline, in Montessori classrooms, these characteristics have been found to increase in preschool children who attended when compared with children who did not attend or who attended another kind of program. Fleege (1967) found Montessori children improved, over a group with no preschool experience, on tests of sensory acuity. Concannon (1966) found Montessori children were superior on haptic (touch) perception to a group of children who did not attend preschool.

A study by Berger (1969) which compared Montessori and a traditional preschool program for disadvantaged children showed specific gains in perceptual and cognitive skills other than language which corresponded to program goals. Although her sample was small, confounding teacher and program variables, the Montessori classes in all cases outperformed the traditional classes on the perceptual discrimination tasks, using Formboard, Block designs and puzzles.[1] As might be expected, they were not consistently superior on delayed memory, immediate memory, general information, and rational concepts, since there were not emphasized. They also were not superior to the traditional group on discrimination learning, although this might have been expected.

---

[1] From a test battery designed for William O. Jenkins and Barbara Frengel, for the Center for Urban Education, New York. The Formboard can also be interpreted as testing speed of learning.

Not just Montessori classrooms, but any program where manipulative materials play a systematic part would be expected to have positive effects on perceptual and sensory-motor skill development. Karnes et al. (1968) compared a traditional nursery school with a "highly structured experimental preschool" program and found a significantly greater improvement for children in the latter on the Frostig Developmental Test of Visual Perception. They attributed this superiority to the systematic practice with geometric shapes in the mathematics curriculum, cutting lessons, dot-to-dot tracing, matching, pasting, crayon and pencil work.

Examples of similar effects of preschool programs on particular skill areas, and not just sensory and perceptual skills, could be given at length. There exist now some good techniques not just for promoting particular language skill and perceptual skills, but also for promoting concept formation (Blank 1967), memory (Jensen & Rohwer, 1965), categorization (Sigel & Olmstead, 1968), conservation (Shantz & Sigel, 1967) etc. Although none of these has been used widely or systematically in preschool programs, and no one knows the extent to which they were successful when used, Miller (1968) concluded after reviewing several specific training programs for young children that "where limited intervention objectives in the psychomotor and cognitive areas are clearly delineated and intervention techniques specifically designed to accomplish those objectives, significant gains can be obtained over a short period." (Emphasis added, p. 6).

While the technology does exist, then, for bringing about some changes in several very specific skill areas, there is little agreement on which are important.[1] Several investigators have argued that it is not specific skills at all which disadvantaged children (or any children) need in order to cope with their environment, including school. They state that unless preschool programs can also change the intellectual processes or cognitive styles with which the children approach their experience, improvement in standard English, in discriminating sizes, letters and colors or in naming objects, will not be of much value to them. While the distinctions between "skills" and "processes" become artificial, cognitive processes or styles are more general than skills. They characterize a child's way of operating in a wide variety of situations, of mentally responding to sets of stimuli. In addition it is more difficult to distinguish cognitive styles from emotional and interpersonal processes than it is to distinguish cognitive skills from these personality characteristics.

---

[1] Bereiter (1967) for example, viewed preschool compensatory education as a problem of preparing disadvantaged children to perform in first grade as well as his middle-class peer. He emphasized directly teaching children concepts and skills which will allow him to perform the academic tasks required of him especially in reading and arithmetic. "Children become smarter through learning things," and these disadvantaged youngsters had to learn them fast to catch up. Some view things primarily like Labov (1969) or Baratz and Baratz (1970), that different cultural styles and different language do not represent deficiencies. An educator working with Negro preschoolers respects the value of existing linguistic and cognitive patterns, and would be hesitant to teach them as Bereiter does, to use standard English inflections, or as Klaus and Gray (1965) do to predict events and delay gratification. Examples of differing preschool programs need not be mutually exclusive to illustrate the point. One can easily see how disagreements (different emphasis on different program objectives, not actual arguments) arise on specific intellectual skills and abilities to be included in a preschool program.

Some of these cognitive processes or styles have proved very difficult either to modify or measure. Klaus and Gray (1968) included the development of certain cognitive styles as objectives in their experimental preschool program. While the program was successful in terms of encouraging the preschoolers to be more analytical and reflective rather than impulsive in approaching tasks (as determined by the longer response latencies and fewer errors on the Matching Familar Figures Test)[1], it was less successful in affecting the ability to delay gratification (at least as far as could be determined by a crude test).

Nimnicht, Gilkeson and others are very concerned, in their preschool programs, with these "mental sets" or "habits of learning" which the children acquire in their early years. Their programs are

[1] Kagan et al., 1964

consciously designed to shape children's general approach to problems and thereby their problem-solving abilities. But there is very little evidence to demonstrate whether they are successful or not. Tests of "process" (such as whether a child scans visual problems systematically) rather than "product" (whether a child chooses the correct object in a visual array) are difficult to design. And while observation systems proliferate, they are expensive to administer and no one of them is agreed upon or used and reported widely.

It is only recently that a somewhat satisfactory test of many of these cognitive characteristics in older (5-6) preschool-age children has come into use. The Cincinnati Autonomy Test Battery (CATB) was designed by Thomas Banta at the University of Cincinnati to measure the development of autonomy in thinking, perceiving and social behavior. It contains subtests on curiosity, impulse control, incidental learning, (tendency to acquire information not referred to in the instructions) intentional learning, innovative behavior (tendency to generate alternative solutions), field independence, persistence and resistance to distraction.

Using several subtests from the Cincinnati Autonomy Test Battery, Louise Miller (1970) has revealed a pattern of differential effects on some cognitive styles brought about by 4 preschool programs:

Montessori, Traditional, Bereiter-Engelmann and DARCEE.[1] In verbal expression of curiosity, there were no differences among the preschool groups, but in the actual amount of exploration of the Curiosity Box, children in the DARCEE program gained by the end of the year while the other programs stayed the same and children who had attended preschool showed a decrease in activity. Children in the DARCEE program also gained more than children in the other programs on resistance to distraction and on innovation. Children in the Montessori program did not do better than the other preschool groups on task persistence or other factors as might have been expected. However, there were only two Montessori classrooms (as opposed to four of each of the other programs) and the teachers had only had an 8-week training course immediately preceding this year in a preschool classroom.

Berger (1969) on the other hand, in two smaller studies comparing Montessori classes with Traditional classes on the CATB, confirmed her predictions that:

---

[1] DARCEE stands for the Demonstration and Research Center in Early Education at Peabody College in Nashville, Tennessee. Dr. Susan Gray is director of that center and the DARCEE curriculum referred to here is the latest revision of the program originated by Gray and Klaus, which sought to enhance disadvantaged children's attitudes toward achievement as well as their aptitudes (i.e. conceptual and linguistic skills).

1) Montessori schooled youngsters will differ from conventionally taught youngsters in the direction of--
   a) stronger motor impulse control
   b) a more field-independent, perceptual analytic orientation
   c) greater task persistence
   d) a more confident, self-reliant achievement set
2) Children undergoing Montessori training will demonstrate greater efficiency in dealing with structured problem-solving tasks.
3) Conventionally taught children will be characterized by more spontaneous exploratory tendencies, in unstructured, ambiguous problem-solving situation. (p. 62).

Dreyer and Rigler (1969), in a comparison of Montessori and Traditional preschool children found a third pattern of differences between the groups. On the Vocal Encoding subtest of the ITPA Montessori children described the examiner's objects in terms of their physical characteristics while Traditional preschool children used functional descriptions more frequently. On Torrance's Picture Construction Test, creativity scores of the Traditional group were higher than those of the Montessori group. And on the Embedded Figures Test (same as CATB's "field independence" subtest), Montessori and Traditional groups did not differ on number of figures discovered, although the Traditional group took a longer time.

Therefore, while we do not have data on effects of preschool, in general, on cognitive style or autonomous functioning, it is not because these processes go unaffected in programs for disadvantaged (or any) children. It is that: 1) only rarely are goals of this kind consciously incorporated into preschool programs, for example, those of Nimnicht (1970), Gray and others (1966), Gilkeson, (Cf. Biber, 1970) and Montessori (1912); they are usually an unwitting part of other preschool programs (Cf. Kounin, 1969); 2) factors which affect changes in such characteristics are more difficult to control;[1] 3) effects on styles of learning and cognitive functioning are not so often and not so successfully measured and 4) there is little agreement among practitioners about which ones are important (e.g. self-discipline goals in some programs are in direct contradiction with spontaneity goals in others).

To summarize this section on cognitive skills and abilities; young children can learn a great variety of specific skills. For some skills, especially language, there are existing methods which have given groups of children some statistically significant advantages. For several reasons, measured changes in cognitive styles due to attendance in a preschool program are less in evidence in studies to date. No statement is possible about what attending preschool-in-general will do for advancing any particular skill or cognitive process, since programs do not attempt to foster the same things.

---

[1] While the style of getting along in the home, for example, might be expected to have very little natural influence on accelerating or depressing the learning of size concept or manipulatory skills, it might encourage or interfere more with a child's tendency to persist in a task, to try new solutions to problems, etc.

With regard to this last point, Kohlberg and Mayer (1971) have recently argued that we do not yet have a good way of choosing preschool goals or assigning priorities among them. They acknowledge that it is possible to obtain short-term growth in certain skills, but they criticize those who insist that either certain cognitive styles or particular intellectual skills are more important than others on the grounds that we have not yet determined the causal relations between these early experiences and later development. Head Start, as well as other present-day preschool programs often are based on what Kohlberg calls the "bag of virtues" approach. These "virtues" or educational goals are generally based on listing particular skills on which disadvantaged children are deficient in school achievement, particular abilities observed to be present in developmentally advanced children, or generally observed differences in behavior between middle-class and lower-class groups, few of which may be causally related to producing well-developed, successful adults.

There are those who would disagree with Kohlberg and Mayer's criterion for setting preschool goals--that because certain developmental stages occur naturally as children mature, priority for school objectives should be based on those abilities which are causally related to furthering these stages. Nevertheless, as will be seen as true throughout this report, the major problems for both operating preschool programs and for evaluating them is the inadequate formulating of goals and objectives.

Social, Emotional and Motivational Changes

If separation between cognitive development and affective development in the young child seems artificial when we try to identify and measure such things as "autonomous learning" and "delay of gratification," the separation of motivation, emotion and inter-personal perception is even more so. Nevertheless we can conceptually isolate such things as feelings of competence, desire to excell, trust in adults and we can recognize that they are important to a child's academic achievement and social status. Not only that, they are important to a child's present feelings of well-being, something which, as Zigler (1970) pointed out, ought to be a first concern of every preschool program.

It is odd that there are so few studies of whether the child is happy and is enjoying himself in the preschool classroom. Perhaps it is because it is obvious--to teachers anyway--that most children are having fun and are enriched by the preschool program. The only formal attempt to answer the question of whether children are "better off" in a preschool than they would be staying at home is part of an observational study on "representative" children in Head Start by Dittman et al, (1970) which reported that preschool provided a focus to their day and exposed children to a range of things in the community they would not otherwise experience. An anecdote which illustrated the point described several non-Head Start children standing sadly by and watch-ing Head Start children getting ready to take a trip on a railroad train. In any case, studies of present well-being or interactions between the child as he is and the environment of the preschool are usually neglected in favor of trying to measure personality traits or changes in them which would predict to future emotional development or to adjustment in school. The consonance of these last-mentioned goals (emotional development and school adjustment) is even less compelling than the consonance of intellectual development and academic achievement mentioned in the previous section .

Self-concept

Measurement of a disadvantaged child's feelings and perceptions about himself and other people, between the ages of three and five, has proved difficult. Some of the tests used with the children have been collected by Boger and associates from the Head Start Evaluation and Research Centers.[1] Those which attempt to measure children's self-concept required that (1) the child point to a picture which represents himself. The pictures show children which are strong or weak, afraid or unafraid, etc. (2) The child, looking at a photograph of himself, answers the examiner's questions such as "Does Johnny's teacher think that Johnny is good-looking or ugly?" (3) the child sticks a gummed label representing himself on a picture of father or a picture of friends, a picture of a book or a picture of toys, etc., and distance (representing psychological distance) between them is measured. Investigators who have used the measures in actual preschool settings have found them very disappointing. It is hard to know whether the tests are at fault (children do not understand all items, e.g. "Does Jimmy's mother think he's smart?"; test-retest reliability is low) or whether the concept of unitary trait of self-regard in 3-5 year-olds on which the tests are based is at fault.

---

[1] Robert P. Boger and Sara S. Knight, Social-Emotional Task Force Final Report Head Start, Evaluation and Research Center, Michigan State University, 1969.

It may be that children of this age are so egocentric that they cannot conceive of themselves as objects. It may be that terming a collection of responses about competence feelings and inter-personal perceptions "self-concept" has meaning for older children but not for preschoolers. Like the trait "honesty" which Hartshorne and May discovered was not a unitary characteristic, self-concept in a disadvantaged child of 3, 4 or 5 may be so situationally determined that tests do not tap one phenomenon.

In addition, as Zimiles (1970) has pointed out, a normative approach to the way children view themselves may be even less appropriate in this realm than it is for the realm of intellectual development. That is, individual children may make idiosyncratic but adequate adjustments in a preschool classroom situation. For some, a perception that the teacher likes them is both the most realistic and the most adptive one they could have. For one child, a perception of himself as not very skillful might be adaptive. Tests which measure all children against one standard "good" self-concept may only succeed in covering up, rather than revealing the effects of the program on children. This is not to say that we do not need normative studies, i.e. research to determine existing patterns of adjustment in young children. It does mean that testing children to see whether they are like a model or "normal" child and then inferring "adjustment" is not appropriate.

In any case, based on direct tests of children themselves, we have contradictory findings. No differences have been found as often as significant differences favoring a group which attended preschool over one which did not. Instruments which did not rely on direct testing of the child but on ratings by teachers, parents or teacher aides, have generally indicated favorable changes in Head Start, State and local preschool and experimental preschool children. The ratings were rarely made, however, by impartial observers, and the ratings were on such items as "emotional maturity," "self-confidence" and "does things on his own," embedded in items about social behavior.

It is probably safe to conclude that, on the average, participation in a preschool program for disadvantaged children does not reduce the children's self-confidence, make them unhappy with themselves or make them think that people dislike them. This conservative statement appears to be the most one can assert for the time being on the basis of objective data.

Even if we assume for a moment that we are describing some real and significant characteristic of the young child, it is certainly not clear that sheer participation in any preschool program fosters a healthy self-concept. There may be some programs (or some teachers) which give almost all children who attend a boost in self-confidence and self-esteem. There may be others which only help children with certain characteristics. While there are strongly differing philosophies on what promotes self-concept in 3, 4 and 5 year-olds, there are as yet no studies of the affective domain which distinguish the effects of programs based on them: those which push cognitive achievement on the grounds that the child's ego will swell from environmental mastery, those which pay special personal attention to each child, whatever his interests and praise him for successes, however small, or those which are based on racial and cultural pride.

That school programs, at least in interaction with home background, can have differential effects on children's self-concepts in later years has been illustrated in a study by Minuchin et al. (1969). At the end of their report, they claimed that "The clearest and most consistent school-related findings...were not in the area of cognitive functioning but in the area of self-perception and attitude--matters of personal identity, perception of development and investment in roles." (p. 372). For example, they "found children in (so called) modern schools to be more differential in their self-perception, more accepting of negative impulse as a part of the self, more invested in their childhood status, and more open in their conception of social sex roles" than children in comparison schools. (p. 372-3). They suggested that the philosophy of learning and of child development which prevaded the classroom was influential in children's personality.

For preschools we have no analogous study. At present we do not have a very good idea of the ways in which we are shaping or changing the preschool child's self-perception. Because in almost every program for disadvantaged children, people have been concerned with positive self-esteem, there is no reason to believe that preschools are doing any harm.

Social Behavior

In general, studies of preschool programs show that children who attend learn how to get along better in a group or classroom situation. The evaluation of Head Start summer programs in 1965 included the results from a sample of Head Start centers as well as a review of studies conducted by independent investigators. In all of these, teachers, parents and/or classroom observers were asked to rate children on behavior items relating to social and emotional adjustment. Ratings were made on all kinds of dimensions, including such things as cooperation with adults, aggressive behavior, following directions, ability to pay attention, social adjustment, attitude toward school and manners. The trend of all the findings in this evaluation study showed Head Start children to have improved on global "social adjustment" dimensions. Some of these studies and also findings from other programs have indicated that children who attended preschool programs were more "ready for school" than children who did not attend. But there is no clear cut evidence one way or another regarding whether preschool enables the disadvantaged child to begin school with a level of social maturity (trust in adults, tolerance for frustration, ability to play with several children, etc.) equal to his middle-class peer.

When school readiness was judged by teachers receiving Head Start children into kindergarten, the positive findings were confirmed by most. But there were exceptions. Some kindergarten teachers found Head Start children less rather than more able to adjust to classroom routines and limits when compared with non-preschooled children. Explanation for greater classroom management problems with former preschoolers may lie in the fact that the disadvantaged children were not always being compared with children of comparable socioeconomic background. Head Start children were still behind their more advantaged peers. In addition, since judgments of readiness are subjective, discrepencies could result in this situation because good adjustment in one teacher's classroom is maladjustment in another's. There were some cases where failure for Head Start children to show an advantage occurred because they had been encouraged to talk up and explore freely in preschool and these behaviors were not permitted in kindergarten classrooms. One could conceive of all studies of this sort as measuring simply the amount of agreement among parents, preschool teachers, and kindergarten or first-grade teachers on qualities which make a child more or less ready for school.

In any case, judged differences in readiness between preschooled groups of children and non-preschoolers have generally been confined to the first few days of class at the kindergarten or first-grade level. On the whole, children seem, as the result of a fairly brief classroom experience, in kindergarten, to be able to exhibit many of those behaviors a particular teacher considers appropriate and adjust to the culture of the classroom.[1] Preschool attendance does not appear to make an important difference.

When we look at the effects of preschool programs on the acquisition of specific social skills or on improvement in the level of social maturity in young disadvantaged children, we run into several problems: 1) While there are many studies concerning social behavior and development in the preschool-age child, there are very few evaluations of preschool program effects on a wide range of social behaviors using unbiased observers. 2) There are no test or rating instruments which people agree are measures of social maturity or even social behaviors to be desired in 3-5 year-olds. 3) Because of different theoretical premises, implicit or explicit, and populations of disadvantaged children with different social problems, preschool programs do not attempt to promote the same specific social skills.[1]

---

[1] This does not include the children who have serious social problems. For children who are quite withdrawn or quite physically aggressive, several kinds of treatment have been tried with success in a preschool context. Marion Blank reported on a technique recently at the Early Childhood Education Symposium at Johns Hopkins in Baltimore. Martin Kohn at the W.A. Whyte Institute and Boger and associates at Michigan State University have described more theraputically oriented systems. And Wolf, Baer and others at the University of Kansas have been using a contingent reinforcement, behavior modification technique with preschoolers. All require one-to-one contact.

Therefore, we have inconsistent and weak evidence from scattered studies (Weikart et al. 1970, Hodges, McCandless and Spicker, 1971, Beller, 1969, Westinghouse, 1969 and Swift, 1964) that preschool sometimes gives children an increase in desired social skills, relative to children without preschool, which persists into the primary grades. No studies have reported social retardation as a result of a preschool experience.

[1] This is not to say that there are no social behaviors which teachers could agree are important for 3-5 year-olds. There is some agreement that disadvantaged children should learn to play cooperatively with others, should learn to use the teacher as a source of information (some middle-class children must learn to do less of this), should be able to complete tasks without teacher's constant presence, etc. However, preschool programs have not been evaluated consistently on a wide range of social behaviors such that changes, if any, brought about by programs emphasizing various social skills were revealed.

Like the area of cognitive skill development, we have some specific techniques which can be used in the preschool setting to develop certain social skills or behaviors such as self-help skills, following directions, cooperation with an adult. But to a much larger extent, the parents' and the teachers' role as models is more crucial in socialization,[1] and we have fewer preschool curricular techniques for say, increasing independence striving, reducing dependency conflict, increasing frustration, tolerance, promoting inter-racial acceptance, teaching sex roles. The personalities of the preschool personnel and, as Minuchin et al. (1969) suggest, the philosophy of development and learning which are reflected by the staff, are highly influential. And yet we have no preschool evaluation studies which demonstrate the power of various programs in changing patterns of social development.

Achievement Motivation

Especially now that there is a test for achievement motivation in preschool children (Adkins and Ballif, 1970) it is evident that preschool experience increases it, relative to the home environment of a disadvantaged child. There is no direct evidence one way or the other on the question of whether, when it is greater at the end of the preschool year, the advantage persists into the primary grades. Insofar as school achievement is superior in a preschooled group, it may be that performance reflects superior achievement motivation, but follow-up attempts on tests of achievement motivation have not appeared in the literature.

---

[1] And it is in this realm where tension between teachers and parents, between middle-class and lower-class, between the State as the agent of socialization or the parent as the agent of socialization is strongest.

It is possible that one of the bases of the preschool movement itself--the notion that intelligence is modifiable--has brought about changes in achievement motivation, through increased expectations on the part of parents and teachers, mediated through increased attention to the child and his performance; increased reinforcement of small successes, attention to the child's own production and in some preschool programs a permissive rather than restrictive atmosphere for for exploration and discovery.

CHAPTER THREE

HEALTH AND NUTRITION

As Gussow (1970) points out, those factors which can be classed as "cultural deprivation" do not exhaust the environmental factors differentiating poor children from others and interfering with their optimal development. Poor nutrition, higher incidence of birth complications and more prolonged and serious childhood accidents and diseases are related to one another and to intellectual development.[1] Taking account of this, under Titles I and III of the Elementary and Secondary Education Act of 1965, state education departments and local school districts have included health services, psychological services and provision of specially needed clothing as part of many preschool programs. The federal guidelines did not restrict the use of funds to uses strictly definable as education or schooling and some of the approximately 50,000 children in Title I- and Title III-supported preschool programs every year have received hot breakfasts or lunches, medical examinations and other health services.

According to Frederick North (1967), Senior Head Start Pediatrician, the Head Start child development centers were designed to be places 'in which a community's poorest children would be provided with educational, nutritional, psychological, social and health services; a setting in which each of these services would contribute to each other's effectiveness and to children's best development; a setting which would stimuate parents and communities to preserve the gains made by these children and to do a better job for all their children." (p. 191).

---

[1] A summary of research to date on the relations between poor nutrition and health and mental development is to be found in Disadvantaged Children--Health, Nutrition and School Failure, Herbert G. Birch and Joan Dye Gussow, New York, Harcourt, Brace & World--Grune and Stratton, 1970.

Since only the Head Start administrators collected information nationally on the health aspects of their program, the findings discussed in this chapter refer only to Head Start centers. Conclusions cannot fairly be generalized to other programs. It is likely that few other programs have proved as successful in serving so many children since few have made provision for such extensive health services.[1] The examination of Head Start's effects on the health of children enrolled is instructive as a feasibility test for preschool programs in general.

Head Start Health Services

> There is widespread consensus...that health services can play an important role in programs directed in helping children, especially poor children, achieve their full developmental potential. Based on this consensus, and on what evidence is available, comprehensive health services for children have been incorporated as a central component of Head Start

---

[1] Programs emphasizing health exclusively (e.g. Maternal and Child Health program) are not included in this statement, which refers to preschool programs only.

Child Development Centers.[1]

North, (1967) lists the health goals of Head Start as: First, to improve the child's present function by finding and remedying all existing health defects - medical, dental, and psychological; second, to insure his future health through preventive measures including environmental safety and sanitation, health education for children and parents, immunizations, fluoride dental treatments, and introducing him to a source of continuing health care; and third, to further insure his future health and function by changing the community in which he lives--its attitudes toward health care of the poor, its structures and organizations for providing health services, and the technical competence of its health practitioners in meeting the needs of children.

To collect information on the accomplishment of these goals the Bureau of Census has had a contract to obtain information on a 5 percent sample of children in Full Year Head Start programs and on a one percent sample of children in summer programs. Also the Head Start programs themselves are requested to send in reports on the disease conditions found in the children, the resources used for care and the costs of providing medical and dental services. Medical consultants to the Head Start programs submit standard reports on the adequacy of planning and implementation of services in the centers. These are collated annually. There are also special contracts for surveys, such as the Dental Survey, and for research on specific aspects of health and nutrition (Hunter, 1970, p. 152).

---

[1] North, 1968

From these reports, it is clear that, while medical, dental and psychological services to Head Start children are not nearly perfect they have improved every year since 1965, and they now involve hundreds of thousands of children per year. A sample of findings from the various services listed above, indicates that the first goal of the Head Start health program is well on its way to being achieved.

Medical and Dental Treatment

The Census findings (Project Head Start, 1968) show that in 1968 more than 90% of the children had received medical and/or dental examinations. According to parental responses on a questionnaire, 85% of the children in Full Year Head Start who needed treatment (35% of all children in the program needed treatment) received it (Hunter, 1970). Projecting to national figures from the census data on dental services, about 44,127 children in Full Year and 111,180 in Summer were being treated for dental cavities at the time of the 1968 survey.

From reports submitted on 5,617 Head Start centers containing over 234,000 children, some representative levels of treatment are listed below:

-of 15,186 children who tested abnormal on tests for anemia (hemoglobin or hemocrit), 70% were further evaluated and treated and 22% still require follow-up (8% unreported)

-of 6,765 children with abnormal hearing on a screening test, 43% were re-evaluated and treated if necessary, 50% needed further follow-up (7% unreported).

The fact that over half of the sampled centers did not return usable data makes interpretation of the dental survey problematic. It reported, however, that of the 15,508 children in the sample who were examined, 9,975 of them needed treatment, most often fillings for dental caries, and 91% received treatment. The cost of the dental services in the 109 programs was $376,500 of Head Start funds and smaller amounts from other sources (e.g. Medicaid, private donations); costs were thus about $22 per child enrolled in 1967 Summer Head Start Centers.

The judgment of medical consultants based on their visits to centers containing about half of the 476,000 children enrolled in the 1968 summer program was that from 50% to 90% of the medical and dental exams and services would not have been rendered or would have been greatly delayed to these children if they had not participated in Head Start. When the consultants' answers were tabulated on the question: "How well did this program succeed in treating (medical) health defects, 52% of the programs were judged highly successful and 35% were judged moderately successful. Thirteen percent were either judged slightly successful or information on them was incomplete. In treating dental problems, 45% were highly successful in rendering treatment, 35% moderately successful and 21% either had slight success or had incomplete records. Only in psychological services were the programs judged only slightly to moderately successful.

Considering the logistics involved in getting medical attention for thousands of poor children, Head Start's success in "improving the children's present functioning by finding and remedying existing health deficits" is considerable. From these data on treatment for disease conditions, beneficial effects on the health status of participating children can be presumed.

Preventive Measures

The achievement of the second Head Start health goal should be characterized as partial. There are, as yet, few means established by which to evaluate the level of change in the children's health due to such "preventive measures" as environmental safety and sanitation, health education for children and parents and introduction to sources of continuing health care. As North points out, there are very few statistics on the present health status of the children, so if measures of future health status are planned, there will be few baseline data for determining change over time. But even if such data were available, there would still be such formidable problems as determining the contribution to health status made specifically by Head Start interventions. In other words, technical problems, e.g. measuring healthiness, determining causes, prevent us from knowing exactly the effects of Head Start and other prechool health programs on the future health status of the children involved.

On the other hand, there have been definite Head Start activities which can be directly linked to future health. Immunizations for polio, diptheria, smallpox, measles and whooping cough reduce the occurrence of these diseases later. The likelihood of contracting any of these diseases after immunization is well known and is quite small for each one.

There is evidence that children in the population which enrolls in Head Start is much less likely to have been immunized by 4 or 5 years of age than children in the general population. For example, only 8.6% of children 1 to 4 years of age in a National Immunization Survey had no DPT immunization, whereas somewhere between 13 and 25% of children entering Full Year Head Start had not been immunized. For measles, the percentages without immunization are approximately 30% for the general population and 60% for the Head Start population (Hunter, 1970, p. 153). Only 10% of the Head Start children in 1968 programs had received no immunization. We have an estimate, then, of the specific Head Start contribution to prevention of certain future illnesses. Fluoride applications like immunization can be assumed to enhance future health status, since the incidence of dental caries is reduced significantly by this treatment. Head Start centers were responsible, then, for insuring the absence of certain disease conditions in thousands of children who might never have had these preventive services or who might not have received them until later. This was obviously an important step in "insuring future health" through Head Start.

Nevertheless, these preventive services were administered to a far smaller percentage of Head Start youngsters than were present-oriented services, such as fillings and iron and Vitamin C supplements. The summary of 1968 census data states:

> About 26%-39% of the children had received one or more doses of DPT and Polio vaccine; 11%-23% had received Smallpox and Measles vaccine; and 28% had had fluoride applied to their teeth during the program by the time this survey was conducted. However, as of mid-program term (if unknowns and unreporteds are included), 12%-18% may not have begun the DPT vaccine series; close to one-half may not have received a smallpox vaccination; over one-third may not have received Measles vaccine, and over one-half of the children may not have been covered by preventive dental measures (that is, they neither normally drank fluoridated water nor received fluoride treatment in Head Start).[1]

Mostly because the problems involved in administering these preventive services are much greater (e.g. fluoride treatments are unequivocally opposed by some communities and professionals; the series nature of many immunizations requires an elaborate system of reminders, providing transportation and funds dispersal) the Head Start program to insure future health status of the children through this kind of prevention has been less thorough than the immediate health care pro-

[1] Project Head Start, 1968, p. 14.

gram.

The long-range and short-range effectiveness of Head Start's health program for the children, of course, cannot be compared. But consultants' reports add evidence that programs to enhance health status in the long run by means of environmental safety and sanitation programs, health education and introduction to continuing health care still have a distance to go before they are as successfully implemented as the short-run programs.

Consultants reported that problems for Head Start agencies were considerable in establishing continuing health care systems. In answer to the question "Was the health program planned and organized so that children could obtain continuing care from the physician examining and treating him in Head Start," consultants answered "to a great extent" in 43% of the cases and "to a moderate extent" in 32%. Regarding the quality of health records to serve as a basis for future health supervision, consultants answered that 35% were entirely sufficient and 45% were adequate. This represents considerable improvement across the entire Head Start program since a pre-packaged Health Bookkeeping System has been made available to the centers. This will continue to help school health programs--the system most often available to Head Start centers--orient more toward treatment and follow-up than they did in the past.

Health education programs, while probably present in nearly every center, were minimal. One would not expect it to be a big part of the program for the children, of course, nor for it to have an important impact on health, but children in most centers are instructed in tooth brushing and sanitary toilet and clean-up routines and some safety habits. The census data for parent participation in Head Start (Project Head Start 1965-67, p. 189) indicated that "for Full Year and Summer 1967 respectively, 69.8% and 80% of the Head Start centers sponsored one or more lectures, demonstrations or workshops for parents" in the month prior to data collection. Of these, 53% of the Full Year centers had a meeting on health topics, and 70% of the Summer centers held theirs on health and/or child development. This does not represent much parent contact on health topics and the nature of the meetings is not known.

Parents' presence during medical exams and treatments (32-44% of the mothers accompanied their children) and Head Start's ability to introduce many parents to some health care institutions probably reduced some anxiety and increased the likelihood that the children would be taken for treatment later when it was needed. But it is doubtful that parental health habits changed significantly through these two activities.

There is no way of telling the extent of Head Start's effects in changing parental health practices nor is there much evidence that if such behavior were changed, the changed behavior would have any substantial impact on health.

The medical consultants judged that 20% of the Head Start programs were highly successful in preventing future health problems through health education and that 49% were moderately successful. Their estimates of the effectiveness of the programs in preventing future health problems through introducing the child to physicans, dentists or available funds and services to provide future care were about 30% highly successful, 40% moderately successful and 15-20% slightly successful. For about 10 to 15% of the grantee agencies there was no information.

Although there is some presumptive evidence that the future health of children in a Head Start preschool program will be positively affected by their participation, there is no direct evidence. Profound effects due to parent health education programs or coordination of school health and public health records and services at their present levels does not seem likely.

Community Change

The potential of the third Head Start health goal for having profound effects on the future health of young children in low-income populations seems better. While there is not a systematic nationwide effort to change the community attitudes toward health care of the poor or community organizations for providing better health services to the children, the size of the Head Start program and the fact of its organized requests for service to this population has already had an impact. Combined with other health related programs for the poor and the general attention to costs of medical services in the United States at the present time, the likelihood of more poor people being reached and their particular needs being served is greater than it was in 1965.

Each Head Start program was required to design its health services and funding to coordinate with those of other health organizations, such as O.E.O. Neighborhood Health Centers, Public Health departments, clinics run by hospitals and medical schools, prepaid medical groups, Medicaid, Mental Health Associations, etc. The medical consultants report shows that identifying such groups, getting them to cooperate in solving the problems of service to the Head Start center and working out permanent arrangements with them for continuing care of the children are all difficult. The consultants, in attempting to help the centers plan their program and its utilization of existing community resources, sometimes contacted local health officers, private physicians, local medical societies and welfare agencies themselves. In their collected responses, they judge Head Start agencies to have had more impact in "increasing awareness of health problems of poor children" than in "stimulating new resources to provide and pay for child health care" or in "making existing resources more responsive to the special needs of the poor." And the more successful they thought the Head Start agency was in "obtaining meaningful participation of all important community health resources in planning the Head Start health program" the higher they rated the impacts. However, only 18% of the agencies were considered "very successful" in enlisting other community health resources and also"highly successful" in increasing awareness of poor children's health needs. Six percent were considered "highly successful" in involving the community and in stimulating the resources to pay for care. Thirteen percent were rated as both highly successful in involving the other resources and in making them more responsive to the special needs of the poor. While these numbers may seem small (actually representing 44-124 grantee agencies), they may have changed the health habit patterns and the future health of poor children more effectively than direct services or parental health education. We do not know.

Although it appears from the consultants' reports that there is still a considerable distance to go, Head Start has obviously made local services adjust to their needs. One perhaps should not ask that the Head Start program be responsible for all environmental factors affecting the child's health--no matter how immediate or removed from direct service to the child--which impinge on his development. But expectations sometimes run as high in the field of health as they do in education. The Survey of Dental Services (1967) team recommended that "local Head Start programs take the leadership to achieve community water fluoridation to improve the dental health of future generations of children." (p. 30).

There is other evidence than that provided by the medical and dental reports regarding the influence of the Head Start program on community health. This is provided by A National Survey of the Impacts of Head Start Centers on Community Institutions, a study carried out for the Office of Child Development by Kirschner Associates, Inc.

The objectives of this research project were:

1. To determine if there have been changes in local educational and health institutions relevant to the objectives of Project Head Start;
2. To determine if local Head Start centers were influential in bringing about relevant changes in community institutions;
3. To analyze how Head Start was involved in the institutional change process;
4. To describe the different impacts on community institutions of various Head Start characteristics and approaches. (p. 2).

Under the first objective, 1,496 changes were identified in 58 communities. Fewer and less marked changes were noted in comparison communities without Head Start. In the Head Start communities, 1,393 changes were listed as "modification of health services and practices to serve the poor better and more sensitively." Some of these were intensively explored in line with the rest of the objectives. An example of the changes which, upon investigation in depth, were determined to have been positively influenced by the Head Start program is the following:

> A health care clinic in an eastern industrial city represents the culmination of many months' effort by Head Start parents, university medical students and faculty members, and the public health department.

> The concept for this clinic appears to have been the brain-child of Head Start parents and other members of the Head Start Parent Advisory Council. (p. 8).

The Kirschner report showed that factors other than Head Start were also frequently important contributors to similar institutional change during the period studies. These included availability of funds under the Elementary and Secondary Education Act and other federal programs for the disadvantaged. But the findings illustrate that Head Start programs were involved heavily in the background stages of appropriate institutional change, in supporting adoption of the changes and in supporting the change during its execution. They were also responsible for proposing the idea, serving as a funding resource and were active in executing the change in many cases. The survey concludes:

> Head Start has played important, active, and visible roles in the process of local institutional change. Moreover, it is strikingly evident that changes of the type described above were rarely identified in the communities without Head Start that were studies. (p. 73).

To sum up, Head Start has had significant positive effects on the health services to poor children, both immediately to those enrolled in the program and in the long-run to those children in low-income families who were never enrolled as well. In addition there were probably scattered innovations which promoted present and future health not by insuring treatment of disease conditions or immunizations to the, but by opening schoolyards as full-time recreational areas to allow children to exercise freely and to provide an alternative to playing in streets, by keeping the Head Start center open all day to care for children who would otherwise be placed under less safe conditions, by starting consumer cooperatives to buy shoes, clothes and groceries, etc. These latter kinds of activity, though less numerous and consistent, may contribute more toward enhancing the general health and development of the children involved than the medical and dental services offered.

Nutrition

The other area in which systematic attempts were made nationally to affect the general physical health of the child was the nutrition program. As the 1968 summary report on Head Start tells us:

> The objective of this component is optimum nutrition for all Head Start children and their families. Six practical methods for achieving this objective have been developed: 1) serving meals to the children; 2) nutrition education for the children; 3) nutrition education for all Head Start personnel in preservice and continuing in-service training; 4) nutrition education for parents which is relevant to their individual needs (including cultural differences), economic problems and food availability; 5) utilization of printed materials assembled in the form of a Project Head Start Nutrition Kit and the film _Jenny is a good thing_; 6) services of Head Start Nutrition Consultants.

There is good evidence that all methods but number 4 were widely implemented. Over 94% of the centers provided lunch (usually hot) and one or more other meals to the children. Mid-morning or mid-afternoon snacks were more frequently the second meal served, and about 40% in

Full Year 1968 and 26% in Summer 1968 served breakfast (usually hot). Reports indicate that staff nutritionists or nutrition consultants planned the meals in 64% of the centers. But they were probably less involved in nutrition education. Nutrition education was more frequently afforded the Head Start center staff than the parents, so it is quite likely that in most centers, the children received not only nutritious meals but associated educational benefits. They were introduced to some new foods, they learned about--and sometimes participated in--the preparation of the food or setting of the meals, and they generally experienced mealtime as a pleasant learning and social experience. About one-fifth of the Head Start mothers either frequently or occasionally joined their children for lunch.

The immediate impact of the meals served every day in hundreds of centers--a feeding program which has now reach over four million children since 1965--should not be underestimated. Certainly it reduced hunger and perhaps illness in some children enrolled (as well as, perhaps, making more food available for the rest of the family). It influenced the children's participation in other daily activities of the Head Start center, and it influenced parental morale and participation. As Birch and Gussow (1970) state:

> It must not be overlooked that the child's present hunger...also immediately affect(s) his level of attention, his interest, his motivation to learn--in short his achievement in the classroom. Unless we feed children today, it may be interesting, but unimportant to their prospects, to decide whether

> the effects of yesterday's hunger will continue to affect their mental development tomorrow. (p. 262).

The effects of the nutrition program on the food consumption habits or the nutritional status of the children either immediately or some time following the program are not known. Nutritional status is difficult to measure, and although some weight, height and hemoglobin level surveys have been implemented to determine the answer, no reports are yet available. Nor is it clear what relationships exist between nutritional status and other aspects of the child's current functioning, although this too is currently under investigation.[1]

The impact of the Head Start nutritional program on children's future (or future children's) health status or general development is even more difficult to estimate. Neither information on the implementation of the nutrition education program for parents nor information on effects on shopping habits, cultural food patterns, consumer knowledge, homemaking skills or new food distribution programs were systematically collected. As Wagner (1969) and Birch (1969) illustrate, an effective program to change nutritional habits in families often involves considerable social and economic changes. The availability of certain foods sometimes must be changed, traditional food practices must be modified through understanding of effects, etc.

---

[1] By Nancy Munro, Missoula, Montana in "Relation between hemoglobin concentration and mental performance," unpublished manuscript, 1966; by Henry N. Ricciuti and others at Cornell University; by Jefferson Sutter and others at Tulane University Head Start Evaluation & Research Center, by Temple University and Women's Medical College in Philadelphia; and, in infants, where nutritional supplements may be more crucial for development, at the Demonstration and Research Center in Early Education (DARCEE) at Peabody College by Susan Gray.

Nationally the Head Start program placed heavy emphasis on nutrition--education as well as feeding. A half-dozen excellent booklets, aimed at different staff levels, designed for training as well as information, and printed in several languages, were distributed to the child development centers and the communities beyond. The number of these publications which has been printed since 1966 is 900,000. In 1971, 175,000 more were ordered for distribution. In nearly every Head Start program in the nation the nutrition film "Jenny is a good thing" was viewed by staff and parents. But effects of this material are not known. Except for anecdotal evidence from a few Head Start and Title I-supported prekindergarten programs and some examples noted in the Kirschner survey (involving a parent-run fruit-and-vegetable-buying cooperative), it is difficult to find data indicating that Head Start changed parent's enrollment in commodity distribution or other food supplement programs, their food purchasing patterns, their utilization or cooking habits or their supervision of their children's intake.

Less than half of the parents were reported (in 1968) as participating regularly in any kind of meeting. And while many parents viewed the nutrition film "Jenny is a good thing" and discussed nutritional practices in the center, it is not known what changes occurred in food habits due to this and to attendance at other lectures, demonstrations or workshops. The home visits reported by the centers did not mention visits by nutrition specialists or home economists, though teachers or center directors may have brought up the subject of nutrition in their visits.

It is not useful to make any judgment on the effectiveness of the nutrition program on the basis of such sparse evidence. We know only that serious efforts were made to implement a nutrition education program. The effects, major or minor, long or short-run, that the Head Start nutrition program has had on young disadvantaged children to date are not known.

We obviously know even less about the nutrition program associated with preschool intervention efforts other than Head Start.

Summary

As a preschool child development program Head Start can be said to have alleviated some of the problems keeping poor children from enjoying a healthy life. It has done a lot of immediate good for young children in terms of relief for medical and dental problems and immediate nutritional deficiences. It has undoubtedly, though unsystematically, exerted influence in some communities on the environment of the children which could maintain their improved health and improve the health status of other low-income children. These changes in communities and in health professionals and institutions will have long-run impact.

There may have been expectations that preschool programs could change the environment for children in such a way that it became a more healthy one in general. On this, Head Start has probably had significantly greater impact than other programs for poor children. But the scope of the problems involved in creating a healthy environment far exceeds what most preschool centers could attempt. Even for most Head Start children, their living quarters are probably not significantly healthier, their play areas safer, their sleeping habits better, their opportunities for outdoor sports increased, their family life more psychologically secure, their mothers attended during pregnancy and birth nor their future health substantially "insured."

It can be assumed that preschool programs other than Head Start have not achieved as much effect on children's short or long-range health status, since their efforts were less extensive.

CHAPTER FOUR

EFFECTS ON THE FAMILY[1]

The data collected by the Bureau of the Census indicated that the families of Head Start children are larger (averaging six or seven members), are poorer (70-80% have annual incomes less than $5000), are more likely to be on welfare (about 20-30%), have more single-parent homes (25-30%), have less education (over 70% of fathers have not graduated from high school) and are less regularly employed (only 58-68% of fathers reported full twelve months employment) when compared with national averages.[2] Families of ESEA Title I-supported prekindergartners are generally better off than Head Start families, although they, too, fall below the national means on these characteristics.[3]

The great bulk of the studies on low-income families have been population descriptions. These studies have identified both characteristics which are held in common among low-income people and characteristics peculiar to various ethnic or geographical sub-populations of the poor, including families participating in particular Head Start and experimental preschool programs.

[1] A most thorough review of programs sponsored by local school districts, special experimental projects and the Federal government, as well as discussion of the issues raised by parent involvement is to be found in Ira J. Gordon's Parent Involvement in Compensatory Education, University of Illinois Press, Urbana, 1969.

[2] Figures are for the year 1968. Project Head Start 1968: a descriptive report of programs and participants.

[3] Education of the Disadvantaged, 1968.

Recent Federally-supported education, mental health and economic opportunity programs have had a tremendous influence on the amount of knowledge available on low-income family life styles and interaction patterns, both through sponsored research and through increasing the direct contact between poor and well-to-do and among various racial and ethnic groups. While knowledge about language (e.g. the work of Hess & Shipman, Schaefer and Bayley, H. Lewis, Kagan & Moss), home management styles (M. Schoggen, Kugel and Parsons), single-parent families (E. Herzog, E. Liebow), levels of aspiration and expectation (F. Strodtbeck, V. Crandall) etc. has been refined, it is clearer now than before that we cannot always identify the causes of the developmental disadvantages in children, we cannot yet distinguish the causal relationships from other relationships among parent behaviors (or other environmental factors) and child behaviors. This means that there is not very much agreement on which changes in the family ought to be affected by preschool programs. And there is also confusion on how far a preschool program can go in intervening to effect changes. Under these circumstances, attempts to have an impact on the family have not been systematic. Evaluation of effects on the family as a result of its involvement with preschool programs reflects this lack of focus.

When a preschool program is initiated in a community, its potential not only to affect directly the 3-5 year-olds enrolled but also their families, other families in the neighborhood or the entire community, is determined by 1) the involvement of low-income residents in the planning, establishment, management and continued direction of the program; 2) the opportunities for employment and career development in the program; and 3) the amount and nature of other participation by parents and the direct services to family members which are part of the program.

Parent Involvement in Managing Program

Some preschool programs have included all three types of involvement as part of their stated purpose. Head Start is the only large-scale public preschool program with such broad scope. Head Start began as part of OEO's Community Action Program, which had as one of its basic tenets the "maximum feasible participation" of the poor themselves in every aspect of planning and operating programs. The idea was to take low-income people out of their dependent and powerless position--to have them "do for themselves." Within Head Start, the community action philosophy also included the assumption that if poor people were able to exercise control over aspects of their own lives and their children's, they would presumably pass on the confidence gained and the feelings of control to their children by serving as competent, achieving, powerful models.

Getting this kind of involvement on the part of unskilled, poorly educated, wary residents in low-income neighborhoods is difficult for many reasons.[1] We have some evidence on the extent to which the parents and neighbors of the preschool children are included meaningfully and had control in 1) planning and goal setting, 2) budgeting and administration, 3) hiring directors and other staff members for the Head Start centers of the nation.

---

[1] The richest examples of political, historical, sociological, administrative and personal reasons for such difficulties are poured out at length in Polly Greenberg's profound book on the Child Development Groups of Mississippi, called The Devil Has Slippery Shoes, Macmillan, New York, 1969.

We do know from the survey conducted by the Bureau of the Census in 1968 that about 86% of the centers reported either a Policy Advisory Committee (P.A.C.) in which parents were included or some parent representation on a committee at a higher administrative level. "About two-thirds of the centers in full year and one-half in summer programs reported that parents were elected rather than appointed," representing an increase in elected members over previous years. Usually one to four parents were representatives on the Policy Advisory Committee, "13% of all Head Start parents in full year and 9% of those in summer were so involved. Over 60% of the P.A.C's averaged one or more meetings per month. P.A.C's were more frequently involved in some form of Head Start program planning (over 83%) compared to aid in selection of personnel (64-75%) or project administration (56-64%)". "About 73% of the centers in full year and 54% of those in summer reported having other center-wide Parent Group Committees."[1]

These figures exclusively from Head Start preschools tell us only about inputs. They do not tell us about effects. They do not say whether parents or other community residents have actually changed their situations or their status; how many are actually making a difference in the way the programs are conducted. In short, we do not have much of an idea how far the establishment has gone to "dis-establish itself."[1] The continued attendance of parents on the Policy Advisory Councils, work sessions to plan programs, etc., constitutes evidence that many have been exposed to the kinds of decisions and problems involved in running such an enterprise, and that Head Start is, to a greater extent than other preschools, viewed as their program. But there are no direct evaluations of impact on parents' status. attitudes or actions, nor is there direct evidence to show that when the poor do conduct the Head Start agencies and centers their children are more likely to be benefited either in the short or long-run.

---

[1] Project Head Start: the development of a program, 1970.

Head Start is unique in attempting this kind of involvement. It is possible that "parent power" in the conduct of Head Start had positive effects on a significant number of parents and through their increased participation on the children. Such would not be the case in Title I- and Title III-supported preschool programs[2] nor most special experimental early childhood education programs.

[1] Ira Gordon's phrase which sums up a basic issue in parent involvement too complicated for adequate treatment here. Like the problem of "what to teach" in Chapter 2, however, a decision on this issue, whether conscious or unwitting, determines the nature of program effects. Other perspectives on the problem can be found in Polly Greenberg's book, mentioned earlier, or Moynihan (1969), Hess (1969), Garfunkel (1970) and Farber, B. Lewis M. and Harvery Research and Development Program on Pre-School Disadvantaged Children, Vol.III, University of Illinois, Urbana, a Final Report to U.S.O.E., 1969

[2] Title I-supported programs have just recently been required by Federal guidelines to constitute Parent Advisory Councils, so this conclusion may change.

There is a great deal of anecdotal and indirect evidence that a few families at least have been greatly affected by this kind of involvement in Head Start. One thing is that, in some instances, Head Start parents have become a considerable community action force. It is safe to assume, for example, that Head Start parents have added impetus to the community-control-of-schools movement and to many civil rights activities. The Kirschner Survey (1970) names particular Head Start Policy Advisory Councils and other community and parent groups as the primary change agent in institutional modifications, such as new health clinics for residents of the low-income area, hiring qualified low-income community residents rather than outsiders as classroom teacher aides in the schools, initiating and staffing a food-buying cooperative. The three characteristics identified in the Kirschner study which were associated with Head Start involvement in change were 1) a high degree of visibility of the Head Start program, 2) a community climate conducive to change (including availability of funds, active civil rights organizations) and 3) _a high level of parent participation, defined as a high ratio of nonprofessional to professional staff and parental control over the selection of staff members_ (p. 17-18, emphasis added). The authors sum up the impact of the Head Start programs on just the health and education institutions of the society--the two their survey covered:

> "One can truly say that these institutions are still not fully responsive to the poor, that the local commitment to change has not been backed by local dollars, and that

> available educational and medical technology is not adequate to the needs. But one cannot deny that in a short time, with a relatively small investment, Head Start has been closely associated on a national basis with the development of fundamental changes in educational and health institutions, two of the most crucial institutional groups in the country. Head Start has been a successful strategy in that it has widely achieved its goals of modifying local institutions so they are more responsive to the needs and desires of the poor." (p.19)

We can conclude that some "parent power" in Head Start had effects for the better on both parents and their young children. And while Head Start effects cannot be separated from those of other poverty, education and civil rights movements, we can assume that its philosophy of participation--even if not practised widely--has been influential in changing teaching and administration in the primary grades of public schools, for example, the use of paraprofessionals and the increased demand for day care and prekindergarten programs.

Several facts remain regarding parents' involvement in running preschool centers. First, effects for the worse on poor families stemming from parent participation in the conduct of the programs have been even less systematically studied than positive effects. We do not know whether, in any instances, having responsibility for directing programs has led to more marital instability, less responsibility for care of children, more alienation, disillusion and corruption.

Second, we do not know the nature or permanence of changes in parents' attitudes about themselves or behavior toward their families as a result of their participation as advisors, directors and committee members, nor do we know how widespread changes are.

Parent Involvement as Staff

Involvement of parents and low-income community residents in decision-making and implementation of the program probably has some effects which are similar to effects which result from participation as preschool staff members--something we know more about. Insofar as both frequently involve the same people working toward the same overall goals in a program recognized by the community, they bring about some of the same changes in knowledge, status, and self-perception and other attitudes.

There are, of course, differences in effects. For paid staff members there is a direct monetary benefit to the worker which has an immediate impact on his family. In addition, different staff roles (teacher aide, social work aide, food, maintenance or transportation workers) foster different skills and self-perceptions.

In any case, this form of involvement is widespread. Head Start centers have employed community residents, especially as paraprofessionals, since their beginning in 1965, 1) so that they could serve as mediators between professional and client and 2) to provide job opportunities which would promote the development of skills, knowledge and a sense of self-confidence so that the poor could help themselves. In 1968, which is the latest year for which figures are available, Head Start centers reported that about two-thirds of all staff members (paid and volunteer) were neighborhood residents, representing one-half of the professional groups (few of whom were poor by the OEO criteria used) and three-fourths of those filling program assistant positions (58%-68% of which had annual family incomes below $5000). Over 83% of the centers reported utilizing parents as staff members, representing an increase over earlier years in centersso reporting. Although most parents participated as volunteers, the proportion of paid staff who were Head Start parents has increased from about 20 to 30% since 1965.[1]

Among State-supported preschool programs, California has supported more innovation in this area than other states. Several California school districts, Oakland, San Diego, and Los Angeles among others, have somewhat successfully experimented with parent-community workers and teacher aides. While many Title I-supported kindergarten programs hire local residents as teacher aides and parent-community workers, etc. there are no data available on the number or the economic status of these employees.

Indirectly, these statistics tell us that some Head Start parents as well as other low-income residents were benefiting from employment in preschool centers. One does not need many case studies to conclude that regular, paid employment of a member of a poor family has tremendous beneficial consequences for the parents and all the children. While there have been several studies on the nature of professional and paraprofessional work relations in Head Start (e.g. Garfunkel, 1970) there have been few studies on the social or psychological effects or

[1] Especially if it is continued beyond a single year or placement services are offered.

the long-range benefits of preschool employment--either paid or volunteer.

It was originally assumed that, besides sheer income to spend, the benefits to employee would include a perception of his usefulness in the program, his changed status in the community and a resulting sense of competence, self-esteem, and confidence in his ability to manage things. For those working directly with children, especially, employment was expected to change child-rearing skills and attitudes as well.[1] Such changes in a mother so employed would be expected (Hess, 1969; Schaefer, 1970) to have favorable effects on her children.

Jacobson,[2] in a partial report of a recent study, confirms the effects on paraprofessional employees in two Head Start centers in New York City. In a center where teacher aides have almost identical roles with the teacher,[3] where they are perceived by the children as a teacher and where they identify more with the teacher than with the parent group, they report being "less shy," feeling proud to know they are teachers, feeling like experts. They report liking this job for the relief it offers from home chores, for the increased status they assume

[1] There is evidence that janitorial, food service and assistant roles other than teacher aide are not as satisfactorily described in most preschool programs. Such employment may only rarely have the effects described here for staff involved in training children. Food staff, from anecdotal reports, often play important roles in the educational program, however.

[2] Jacobson, Claire, "Work relations between professionals and paraprofessionals in Head Start" paper presented at meetings of American Educational Research Association, New York, 1971.

[3] Since we do not know how widespread this paraprofessional role is, it is not appropriate to generalize the findings too far. Some have claimed that feelings of incompetence and alienation result in centers where paraprofessionals have menial roles but there is contradictory evidence on reactions to employment.

in the local community, and because it is more meaningful than restaurant or factory jobs.

While Jacobson did not observe mother-child interactions in the home, the teacher aides reported reading to their children and initiating other Head Start activities (e.g. water play, play dough) at home. "Two teacher aides report that they have made a transition from corporal punishment to reasoning and a more psychological approach to their children's misbehavior: ...now they talk to their children, ask them to explain the why's and wherefore's of their misbehavior." (p. 8). The aides also have "a comparative perspective on children of the same age range as their own children, which gives them some idea of child development norms and enables them to develop realistic behavior expectations for their own children." (p. 8).

There were similar findings among social work aides in the same centers, although these women did not have a role as nearly equal to the social worker as the teacher aide to the teacher nor did they identify with her rather than the parents they served.

Jacobson did not observe effects on the children, although we shall see in the next section that intellectual and emotional benefits were likely if the employed mothers felt more competent and carried activities from preschool into the home.

We also do not know how similar the effects would be for volunteer workers, although in Head Start they are sometimes regularly employed as paid workers. Much can be presumed about effects from the fact that nearly 100,000 volunteers of all ages and socioeconomic strata participate in Head Start each year. Although there has not been a systematic follow-up, either on later employment status, marital status (Jacobson indicated possible marital tension as a result of the wife's success, financial and otherwise), or effects on younger and older children, we have anecdotal reports that people in all age groups now employed or in training as child development workers began by serving as Head Start volunteers.

For those who are employed in Head Start preschool programs, there is an added benefit--job training. The percentage of staff which has received some form of training, through employment in Project Head Start has increased from 30% in 1965 to 65% in 1968 summer programs and to about 75% in 1968 Full year programs. Since 1969, Career Development Committees have been required in each program to plan for placement and promotions as well as for training. Head Start always has offered pre-service orientation to summer personnel as well as in-service training through professional consultants, discussion groups, lectures, after-hour classes and in-house supervision. Some Full Year staff members attended eight-week training sessions in child care and early education and development conducted by universities, as well as receiving in-service training. To carry out these training functions as well as other (adult literacy and vocational training), the centers have received assistance from a network of Regional Training Offices. Supplementary training of Head Start personnel, especially in line with new "career development" plans, has recently been assisted and promoted through a special contract. Under this program in which some Full Year Head Start staffers take courses for credit at local colleges, 169 have received certificates indicating completion of 18 to 60 credit hours, 246 have received A.A. degrees and 42 have received B.A. degrees. Several have attained the M.A. degree. Nine thousand three hundred and seventy-six are presently enrolled in college courses. This has had effects on the colleges (stimulating new courses, reorganization of departments) as well as on Head Start employees.[1]

Such an extensive system for vocational training of adults and planning for their placement is unique to Head Start among public preschool programs; however, no research reports are yet available on the benefits or strains of this program either in the short or the long-run for the trainees, their families or the Head Start or other programs in which they are employed. No studies on employment or training of parents and other low-income neighborhood residents which may be carried on in locally-supported or State and Title I-supported preschools are in the literature.

---

[1] Head Start Perspectives on Training and Career Development, Patricia S. Fleming (Ed.) is the newsletter of the contractor, Supplementary Training Associates, 4301 Connecticut Ave., N.W. Washington, D.C. 20008. It includes individual success stories as well as comment and description of various college training programs around the nation. The fourth issue, for example, describes the experiences of Mrs. Teresa Swierat, mother of nine, a food service worker in New Jersey Head Start who is completing her training in Nursing now after having gotten her start in the Supplementary Training Program.

Parent Participation and Direct Services to Families.

Nearly all preschool programs for disadvanted children include some activities in the third category of involvment: parent participation and direct services to family members. We have some idea, mostly again from Head Start, about the extent of parent participation. There are statistics on number of meetings held, lectures and workshops conducted, home visits by teachers and other staff, parents on committees or helping on field trip. These indicate that amount of contact between the preschool program and most parents includes such things as meeting the preschool teacher, attending one or two meetings on child health or development, talking to a social worker or parent-community aide and perhaps accompanying the preschool class on a trip into the community to full-time volunteer classroom work and membership on a Parent Committee.

There have been special parent participation programs within Head Start, in State- and Title I-supported preschools and in many cities (e.g. Oakland, Detroit, Fresno, New York) which were designed to involve parents heavily in the preschool program (with goals ranging from helping the parents themselves to helping the children more) and which have impact evaluations. Usually impact has been assessed by means of questionnaires filled out by the parents regarding their feelings about whether the program was worthwhile, helped them and helped their children. In general, such studies have showed overwhelmingly favorable responses toward the preschool program and the parent-partication component. Most often the favorable response of parents to the preschool program was the most significant finding in the evaluation. While responses on questionnaires handed out in connection with the program being judged are somewhat difficult to interpret,[1] it is also interesting that many respondents felt that they were more comfortable in a school setting and now felt that someone in the community definitely cared about the poor or the respondent in particular. On questions regarding specific effects, such as whether the parent learned anything new about raising his child, or received direct service himself, the positive responses were much more moderate, due no doubt to the fact that different kinds of specific activities were emphasized in the different programs.

Parent Participation

Generally those parents who voluntarily participate are found to have preschool children with higher IQ and achievement scores. But this undoubtedly reflects the quality of parental interest and parent-child interaction (as well as fewer transportation, health and economic, familial problems) at least as much as it reflects the direct effects of the mothers' participation in a particular preschool program. It is a fairly general finding that induced parent participation does not make a noticeable difference in the preschool child's performance unless that participation is fairly intensive, that is, at least regular attendance at weekly meetings focused on a fairly narrow topic. It is unlikely that monthly evening meetings with parents on topics of child-rearing, intellectual development, "What parents can do," etc. has a measurable influence on children's performance. The effects on the parents themselves of this kind of participation have been even more difficult to identify and measure.

---

[1] A more sophisticated study of parent information and attitude change will be forthcoming soon when the parent interviews, administered by Head Start Evaluation and Research Centers in Head Start programs around the nation are analyzed and reported.

The effective parent participation programs seem to be almost indistinguishable from a volunteer teacher program. That is, the more the parent is viewed and views herself as an educator of her child, and the more she is provided with ideas and "lessons" and specific methods to use with her child, the more effect she has on the intellectual development of all the young children in the family. While changes in parental attitude have proved a little more elusive to measurement, there are some studies showing positive change and none reporting unfavorable changes from involvement of this kind.[1]

McCarthy (1968) studied parent attitude change and child's language ability change as a function of three levels of parent particapation: 1) regular, specific, planned, group meetings with a teacher and consultant, 2) weekly home visits by the child development consultant or, 3) no contact at all. Forty-one 4 year-olds in three Head Start centers were assigned to these three parent-participation conditions in such a way that the groups were matched on mean IQ, sex ratio,

---

1 Attitude change from involvement of adults which is not focused on the children (e.g. civil rights, self-help groups) has been little studied.

number of siblings in family, education level of the parent and Negro/White ratio. The children were tested at the beginning and at the end of the preschool year on the Peabody Picture Vocabulary Test (PPVT) and the Illinois Test of Psycholinguistic Abilities (ITPA). The parents were pre and post-tested on an attitude survey instrument designed by Hereford.[1]

The ITPA scores indicated that children whose parents were in the home-visit group performed significantly better than the children in the group with no parent contact. They scored higher on all subtests. The group whose parents participated in weekly meetings were superior to the no-contact group on five subtests but this did not represent a statistically significant difference. The PPVT revealed no significant differences among the groups.[2]

The only statistically significant difference in parent attitudes occurred between the group which had received individual home visits and the group which had received no contact. Parents in the home-visit group gained more on the subtest "Confidence."

Stern et al. (1971) used three attitude instruments to identify

---

1 Hereford, C. Changing Parent Attitudes through Group Discussion, University of Texas Press, Austin, 1963.
2 This finding, plus similar ones on the PPVT in studies by Stern et al. (1971) and Weikart and Lambie (1969) suggest, as Benjamin Bloom has, that some things are more easily modified in the home environment of young children than others. And parental vocabulary and speech patterns are less modifiable than other things, e.g. spatial order in the home, regular mealtimes, reading and talking to the child, encouraging talking, and playing games.

and measure parental attitude change: Parents Expectations of Children in Head Start (PEACH), the Parent Attitude Toward Head Start (PATHS), and "How I Feel," a measure of alienation. They too found little change in what the parents thought was important for their children to learn (PEACH), and in what they thought about the Head Start program (PATHS), even after twelve well-attended meetings at which parents "were given materials, shown how to use them with their children at home, and how to turn everyday objects and events into learning experiences. They were also given opportunities to express their feelings, ventilate their grievances, and in all ways be made to feel adequate and competent partners in planning educational experiences for their children." (p. ii) Stern et al. did find, as they had in an earlier study, a slight decrease in feelings of alienation on the "How I Feel" instrument. Unobstrusive measures, such as attendance and the eagerness of the parents to continue the meetings after the twelve scheduled sessions were over seemed more indicative of change than the formal measures.

The children of the participating parents showed a significantly greater gain and post-test score on the Caldwell Preschool Inventory than the group whose parents had no special parent involvement program. The PPVT post-test scores were not significantly different for the two groups, although the experimental group gained more on this test. Children of parents who attended the meetings more often and who were least alienated (as measured by the "How I Feel" instrument) scored higher on the PPVT than did other children. But this last may not have been a result of the intervention.

It is clear, then, that parents' involvement changed their actions, because children did perform differently when their parents participated. If some parental attitudes were significantly altered, they were not those measured by these instruments. It appears that we do not yet understand well what effects we have had directly on the parents. We do not know what the mechanisms are which mediate the changes in the children. But we do know that educating the parents to become home teachers can have significant positive effects on their preschool children.

A study of diffusion of effects to other members of the family grew out of a finding in the Early Training Project (Klaus & Gray,1968) that the younger siblings of the children attending the preschool program had higher scores on the Stanford-Binet Intelligence Scale than the younger siblings of children without preschool. In the Early Training project it was not certain whether this was a replicable phenomenon or whether the preschool child or the mother was responsible for the superiority of the younger child.

The recent study was conducted by Gilmer, Miller and Gray (1970). In one group of families, selected from a large Negro housing project, both the preschooler and his mother attended the center--the mother once per week, the child five days per week. The mothers' training program was a carefully-planned "sequential process of skill development." The mothers moved from directed observations in the classroom to a practice-teacher role during the year. In addition, mothers in this group met in individual homes on a rotating basis in which home management, as well as child development and other skills were taught and practised.

In a second group, only the preschool-age child attended the center. These children had an identical curricular program to the preschoolers in the first group.

A third group involved no formal preschool program at the center. A home-visitor came for one hour per week to work with the mother and her preschool-age child on highly concrete skills which the mother practised with her child during the rest of the week.

Results showed the Stanford-Binet performance of the child was better if he attended a preschool program (groups one and two) than if he and his mother worked together, supported by weekly contacts with the home visitor. If the home visitor program was continued for a second year, the child in this program did almost as well as the child in the special classroom preschool program. There was some evidence that children in the groups where mothers were involved sustained their IQ gains longer than children in the preschool-only group.

The most important finding is that the younger brothers and sisters of the preschool age children did much better (on IQ tests) if the mothers were involved in the program. That is, the younger siblings in group one and group three (home visitors for two years) did better than the younger siblings in group two, in which only the older child was involved in the preschool program. This result was also found on a Basic Concept Test given to younger brothers and sisters in all three groups. Those whose mothers had participated knew more of these concepts than those whose older brothers and sisters only had attended a program. Gilmer, Miller and Gray suggest that, especially where a full-fledged preschool program is not feasible, a home visiting program can be an "economical way to bring about the enhanced educability of the children in a family..." (p. 50).

In addition to this spread of effect to the younger children in the family, Miller conducted a study which indicated that, contrary to what some people had predicted, there were no ill effects on older brothers and sisters as a result of the younger child having participated in a special preschool program along with the mother. The investigators also collected evidence informally on changes in the mothers themselves and on family activities. They reported that many mothers who participated went on to finish high school, enroll in vocational education courses (nurses aide, cosmetology) or take positions in preschool and day care programs (including the DARCEE program).

> Interest and participation in community affairs broadened social contacts...increased markedly. There were cooperative outings, a rotating book library, and the establishment of a bowling league which included fathers. There were increases in the number of checking and savings accounts, which almost none of the parents had before the study began. These changes in life style would seem to be the result of the development of environmental mastery, which may be expected to have a supporting effect on the children's continued development. Only future data gather-

ing...will show us whether this prediction is correct. (p.48).

While many studies have pointed out that when mothers' self-esteem is high, the young child's self-esteem is also high, no studies have been able to show that if we increase self-esteem in the mothers, the children show like changes or increases in achievement. Ira Gordon (1969), in a program to train mothers as educators of their own infants found several attitude changes in the mothers as a result, (although the major measure of self-esteem did not yield significant differences). While informal observations of behavior and attitudes revealed improvement in the experimental group and formal measures showed these mothers had increased expectations that they themselves rather than environmental circumstances were in control of their actions, Gordon could find no direct relationships between these changes in mothers and their children's performance. The infants in the experimental group had improved relatively more than those in a control group, but mothers' attitudes about themselves had not been shown to be a mediator of that improvement.

There are features of these studies and many other experimental programs around the country which suggest "lessons" about parent participation programs.[1] They appear to affect the parent more:

1) if they are intensive experiences; that is, a relatively

---

[1] We are here discussing parent participation in such activities as attending self-improvement classes, acting as home child development agent, helping voluntarily in center tasks. We are not discussing, as we did earlier, participation in terms of political control or management of the program.

narrow focus (at least initially) over a considerable period of time.

2) if they are concrete and specific to the parent's particular life situation.
3) if there is good rapport (mutual respect, no threat to security) between the preschool or home-visitor staff person and the parent.
4) if mastery of a skill or the rewards of participation are easily perceived.
5) if the parent himself is responsible for the outcome and perceives himself as necessary for achievement of the goal.
6) if the parent knows that he is part of a larger project (study) or group (Head Start mothers).

Stern et al. (1971) struggled with one last problem which is common in parent-involvement programs, whether conducted at the preschool center or in homes. Complete failure to elicit or maintain parent participation has been reported often (and probably has not been reported nearly as often as it has been experienced). Factors too numerous to discuss here, involving political situation in the communities, the degree of poverty and disruption in the homes, and the personalities of preschool personnel and parents often lead to non-cooperation. As Stern et al. put it:

> Even as it was clear that the program was most effective with those who participated most, it was equally clear that the parents who could have profited most from this type of group experience, the alienated and disspirited, were least likely to participate. (p. ii).

Direct Services to Families

Besides being a part of the preschool program, the families of participating children can be affected through services offered directly to them. Both Head Start and Title I preschool programs often offer social and psychological services by which families in need are assisted in helping themselves, through counseling and referral to health clinics, public housing authorities, family planning agencies, welfare agencies, vocational training programs, food distribution programs and employment agencies, etc. In addition workshops or classes are held for parents in home economics, nutrition, English literacy, etc.

In order to get an idea of the impact such services have on the families, Kugel and Parsons' (1967) study on "changing the course of familial retardation" will be discussed as an illustration. It was a program aimed at the truly "alienated and disspirited" families which Stern and others have claimed were most difficult to reach. And it was a very intensive, comprehensive service program for the whole family, including the preschool child, and thus represents an effort more extreme than could be expected to be found in other publicly supported programs.

In this study a group of white Midwestern children whose IQ scores indicated retardation were provided with a preschool program accompanied by extensive services to them and their families, drawing on professional services to doctors, psychologists, educators, speech pathologists, social workers, public health nurses, home economists and dentists. Over a period of several years, mothers were aided in dietary planning, in budgeting and providing clothing and furnishings for their families. Teenagers, as well as mothers in the study group had meetings regarding their own interests and problems. Fathers were treated for health problems, helped in vocational rehabilitation, in seeking jobs and in finding adequate housing for their families:

Some illustrative results from the study follow:

> Of the various parts of the Family Life Study, the women's group was one of the more successful. It served many purposes: to motiviate the mothers to clean up their houses; to give the women a feeling of belonging and being accepted; to stimulate their interest in investigating other aspects of society (some joined the PTA--some would now just barely stand up for their rights in front of a store clerk); to make friends among themselves; to exchange baby-sitting and clothing; to have a place to tell good and bad news; and best of all to give them self-respect. (p. 39-40).

From two case histories:

> 1. At the end of two years of intensive service to this family, it would seem that they, especially Mrs. Cummings, had risen in status in their own eyes. *They would still require support and help in many areas*, but they were able to ask for help when they needed it. It appeared that this mother needed the stimulation of belonging to a group in order to keep her spirits up.
>
> The young daughter was above the maximum IQ for inclusion in the experimental school when she reached age three. Whether this was a result of the siblings' stimulation and the mother's greater interest in and understanding of the world about her cannot be definitely stated, but it remains a possibility. (p. 43 emphasis added).
>
> 2. Movement was slow, with much backsliding, during the first year, but during the winter of 1960 things moved more swiftly. After much vacillation, Mrs. Inman divorced her husband, which enabled her to receive money directly from the welfare department. She moved to an adequate farm home just outside the city limits, with hot and cold running water and a bathtub. The house was kept in order. Mrs. Inman was usually quite nicely dressed and kept her hair waved and trimmed. The girls also were improving their dressing habits. They were relieved of neighborhood disapproval and temperamental attacks by their father.

> With continued support, Mrs. Inman could probably avoid budgetary and social problems. She showed little sign of backsliding...and seemed to have gained insight into the handling and purchasing of food. Without support, however, the prognosis would be guarded. (p. 46 emphasis added).

Several things can be concluded from studies such as this. These families were given tremendous psychological support and relief from many of their problems. The immediate effects of such a comprehensive service program on the families were beneficial. The families demonstrated a great deal of pride in their improved situations and new grip on problems. Family attitudes, as well as economic and social status were significantly altered, demonstrating that it can be done.

How sustaining such treatment is depends as it does for the disadvantaged preschoolers, on what follows these experiences. The long-run effects on the family in terms of happiness, health, and eventual economic stability were in no way assured, even with this massive support. The families were still plagued by crises at the end of the study. For most of the families, long-run continued improvement could be considered unlikely.

It is hard to believe that the kind of supports provided by a Head Start or Title I family service program could do more, or as much. It is probable that such preschool programs have only minor effects on the majority of family situations described by Kugel and Parsons. Perhaps the kind of services they are able to offer could give enough encouragement to a family about to "make it" that their children would.

And probably a number of "alienated and disspirited" parents have, through direct services, reached a level of confidence from which they began to solve their own problems and gained control of their own economic and personal situation. Some have definitely been brought to the point where they became involved in running the program, staffing the program, or participating by becoming good models for and educators of their own children. Some may simply have been brought into the sphere of public assistance where their chances for survival are greatly improved. It is clear that we do not have studies which show the comparative advantages of direct assistance programs, participation in service programs or community management of programs for achieving various goals.

CHAPTER FIVE

CONTINUITY OF EFFECTS

There are very few studies on the long-range effects of preschool programs, especially if long-range is taken to mean a follow-up into adolescence or adulthood. Harold Skeels' (1966) twenty-one follow-up of the Skeels and Dye and Skodak studies in 1939 became an immediate classic. Skeels reported on 13 now-adult individuals in an experimental group and 12 now-adult individuals in a contrast group, all of whom had similar beginnings.

Twenty years before, the children in the experimental group were 19 months old and lived in an orphanage. They were retarded and had not been adopted. Their mean IQ was only 64. These children were taken out of this institution and placed in an institution for the mentally retarded. But in this new institution they were put under the care of several older female inmates and attendants. These mother-surrogates took up their roles with enthusiasm, even competitiveness, and each talked, taught and played with her ward and took pride in his accomplishments. The children also attended a nursery program and went to kindergarten.

The contrast group of children, who remained in the orphanage, were considered normal and had a mean IQ of 87. They were considered placeable but for various reasons were never adopted.

At the end of two years in wards for retarded females the children in the experimental group had gained more than 28 IQ points, the contrast group remaining in the orphanage had lost more than 26. The children in the experimental group were all placed and grew up in normal families. Over twenty years later the differences between the two groups were even more dramatic. The median grade completed in school was 12th for the experimental group and 3rd for the contrast group. Every single individual in the experimental group was self-supporting whereas four of the 12 in the contract group were still wards of the institution; one had died there. Of the remaining seven, their median income was $1,200. The median income of the experimental group was $5,220 (in 1963). Most of the people in the experimental group were married and had children with normal intelligence. Two in the contrast group were married and only one had normal children.

We may see today how the programs of environmental stimulation afforded Skeels' subjects differ from programs such as we have discussed so far in this report. We can see what a great contrast there was between treatments the two groups received both in the preschool period and in the years that followed. But earlier, this was one of the studies which gave much hope and high expectation for preschool intervention programs. Skeels' study did demonstrate the power of the environment to shape the intellect for better or for worse. Most pertinently, it showed that it was possible to foster development such that children for whom the prognosis was almost hopeless could become participating, well-adjusted, productive adults. We would expect that the more closely we duplicated the conditions Skeels described, the more we would approximate his results.

At first glance we can see that the differences in experiences of the children in the experimental and control groups we have described in this report are far less extreme than those Skeels described. The orphanage environment his control group experienced is not close to that of most of the children we have seen compared with children in Head Start, compensatory prekindergartens or experimental research programs for preschoolers. Although we do not have other such longitudinal studies of preschool intervention with differential follow-up experiences into adulthood, there are several preschool programs which have followed the children into the primary grades, and a few have tried continued special programming.

People who hoped that preschool programs for the disadvantaged would produce, like Skeels' study, adults who were high school graduates rather than dropouts, or who hoped that early stimulation alone would eventually lead to superior socioeconomic status of the preschooled group over a control group in adulthood, would have expected to find quite noticeable differences already in the first three grades of school. One criterion for success of a preschool program--at least in 1965--was that there be superior performance in primary school by the group which had received special educational or comprehensive services in preschool. Many expected to find that the achievement of disadvantaged children given special preschool enrichment would equal that of more-advantaged or middle-class children or to reach the "average" range on standardized test norms.

The Westinghouse Report

The most well-known report of such intermediate-range effects of preschool programs is the Westinghouse/Ohio University report on primary-grade children after Head Start. This study was commissioned by the Office of Economic Opportunity in 1968. The general atmosphere surrounding the contract from initiation to repercussions after the report in 1969 was that Head Start, although funded since 1965 and still a very popular program, had not been "proved" to be worthwhile in terms of its objective. The objective everyone had in mind is suggested by Smith and Bissell (1970) in a critical review of the Westinghouse study: "Head Start is viewed by both Congress and the public as an attempt to prepare disadvantaged children for first grade and to bring their academic skills up to middle-class levels." This may be somewhat unfair. The Head Start goals, mentioned in Chapter 1, did not include school preparation, much less emphasize it. And it is clear that the majority of Head Start centers did not take academic achievement as a primary goal. It was de-emphasized in all suggested curricula for Head Start programs issued in the Federal guidelines. General child development was emphasized. Light and Smith (1970) felt that limited evaluation questions such as the Westinghouse/Ohio University group was asked to answer run the risk of having the "program judged by its failure to produce results they never intended to produce in the first place." Whether it was a fair question or not, it was the one which a majority of the public and perhaps of the preschoolers' parents felt should be answered in the affirmative. The answer to the question was perceived in the administrative branch of the Government especially as important for policy-making and as relevant to Congressional support for the Head Start program.[1]

The Westinghouse study was designed to answer one question: To what extent are the children now in the first, second and third grade who attended Head Start programs different in their intellectual and social-personal behavior from comparable children who did not attend? That is, it only attempted to answer the gross question of whether all the money and effort which was put into the Head Start program had "paid off" in terms of the average child's performance on school achievement tests, classroom behavior and attitudes toward others, as compared with the average non-participating child. There were some secondary analyses made on the differences in effects of programs with different racial/ethnic compositions, geographical regions and city size. And there were some suggestive relations drawn between parent background data and children's performance. But these were not the major focus of the study.

As both the authors of the report and its critics have pointed out, the study does not distinguish whether some centers were success-

[1] The study was funded by OEO's evaluation office, not Head Starts.

ful while others were not, whether some children benefited while others did not, whether the changes found in the primary grades were associated with immediate changes in the same children during Head Start, or whether there were changes in the children's health, nutritional status, families or communities.

The Westinghouse/Ohio University group was required by time constraints to measure the effects of Head Start several years after the children had participated. This did not permit them to insure that two equivalent groups were chosen by random sampling before the treatment (preschool vs. no preschool). They therefore tried to match the two major groups (those who had participated in Head Start and those who had not) on those characteristics which were known to be associated with intellectual and social-personal development.

From the 12,927 centers in operation in 1966-67 in the continental United States, a simple random sample of centers was proposed. Two hundred and twenty-five centers were drawn in order to obtain a final sample of 104. One hundred and twenty-one centers were not included either because of "unwillingness" of Head Start officials to participate in the study, because control populations were not large enough to find matched children, or other reasons. The target geographical areas served by the 104 centers were identified and all children who had been eligible to enter the center during particular years of its operation were located. A random sample of children who had attended and a matched sample of children who had not attended were identified. Children were included in the sample only if: 1) they had been in the area since the Head Start year and up to the time of the study, 2) they met the income eligibility requirements for participating, 3) they attended the same school system and 4) they had no other preschool experience. Not all areas had children entering first, second and third grades.

Samples of eight children were drawn from the former Head Start group and non-Head Starters were matched, as a group, to the randomly-drawn eight on sex, ethnic/racial membership and whether or not kindergarten was attended.

By analysis of covariance, using socioeconomic status[1] as the covariate, the investigators hoped to be able to claim that any difference between the mean scores of the former Head Start groups and the matched control groups were due to the Head Start experience itself and not the result of other, extraneous differences between the groups.

During the 1968-69 school year, children in both groups were tested on the Metropolitan Readiness Test (1st grade), Stanford Achievement Tests (2nd and 3rd), ITPA, Child Self-Concept Index, Classroom Behavior Inventory, and the Children's Attitude Range Indicator. The last three were designed especially for this study since reliable instruments to measure primary grade children on these dimensions were not available. Scores of the groups were analyzed separately for Summer and for Full Year Head Start programs and for each of the grades, first, second and third.

---

[1] The analysis of covariance used employed the socioeconomic status of the family at the time the study was conducted rather than at the time of the Head Start program, assuming that Head Start would not have changed family SES.

Since 121 centers had been dropped from the sample for various reasons, the investigators checked to see if this group differed in some way from the remaining sample--to insure that centers which were dropped did not introduce a systematic bias. They checked the correspondence of answers in rejected and accepted centers to 32 questions on the Head Start Official's Interview Questionnaire. The questionnaires for the samples not included in the study were mailed to the respondents; less than half of these were returned. On the 32 items which the investigators selected to compare, five items indicated statistically significant differences between the included and excluded groups. A few of these comparisons referred to parent participation and looked as if they might favor positive effects of Head Start if the groups had not been excluded. No estimate of the biases was attempted. Nevertheless, the Westinghouse/Ohio researchers were satisfied that the differences noted were not important and that centers included in the samples did not differ from the centers excluded in significant ways.

As another check on the representativeness of their sample of Head Start children, the investigators compared it on ten characteristics with the larger Bureau of Census sample for the same year. They found several differences between the groups, but generally felt that these would not affect the conclusions.

It may be worthwhile at this point to quote extensively from the authors' own summary of the findings. There are many people who have not read the report or its summary and who know only that the Westinghouse report, like the controversial Wolff (1966) report earlier, showed that the gains of Head Start level off in the primary grades.

> 1. In the overall analysis for the Metropolitan Readiness Tests (MRT), a generalized measure of learning readiness containing subtests on word meaning, listening, matching, alphabet, numbers, and copying, the Head Start children who had attended full-year programs and who were beginning grade one were superior to the controls by a small but statistically significant margin on both "Total Readiness" and the "Listening" subscore. However, the Head Start children who had attended summer programs did not score significantly higher than the controls.
>
> 2. In the overall analysis for the Stanford Achievement Test (SAT), a general measure of children's academic achievement containing subtests on word reading, paragraph meaning, spelling, arithmetic, and so on, used to measure achievement at grades two and three, the Head Start children from both the summer and the full-year programs did not score significantly higher than the controls at the grade two level. While the children from the summer programs failed to score higher than the controls at grade three, an adequate evaluation of the effect of the full-year program at this grade level was limited by the small number of programs.
>
> 3. In the overall analysis for the Illinois Test of Psycholinguistic Abilities (ITPA), a measure of language development containing separate tests on auditory and vocal reception, auditory and visual memory, auditory-vocal association, visual-motor association, etc., the Head Start children did not score significantly higher than the controls at any of the three grade levels for the summer programs. In the case of the full-year programs, two isolated differences in favor

of the ITPA, namely, "Visual Sequential Memory" and "Manual Expression."

4. In the overall analysis for the Children's Self-Concept Index (CSCI), a projective measure of the degree to which the child has a positive self-concept, the Head Start children from both the summer and full-year programs did not score significantly higher than the controls at any of the three grade levels.

5. In the overall analysis for the Classroom Behavior Inventory (CBI), a teacher rating assessment of the children's desire for achievement in school, the Head Start children from both the summer and the full-year programs did not score significantly higher than the controls at any of the three grade levels.

6. In the overall analysis for the Children's Attitudinal Range Indicator (CARI), a picture-story projective measure of the child's attitudes toward school, home, peers, and society, the Head Start children from the full-year programs did not score significantly higher than the controls at any of the three grade levels. One isolated positive difference for summer programs was found on the "Home" attitude subtest at grade one.

7. The above findings pertain to the total national sample. As mentioned previously, additional analyses were made for three subgroups of the national sample: geographic regions, city-size groups, and racial/ethnic composition categories. Analysis of the summer programs by subgroups revealed few differences where Head Start children scored higher than their controls. Analysis of the full-year programs by the same sub-groupings revealed a number of statistically significant differences in which, on some measures (mostly subtests of cognitive measures) and at one or another grade level, the Head Start children scored higher than their controls. There were consistent favorable patterns for certain subgroups: where centers were in the Southeastern geographic region, in core cities, or of mainly Negro composition. Even though the magnitudes of most of these differences were small, they were statistically significant and indicated that the program evidently had had some limited effect with children who had attended one or another of these types of full-year centers.

> 8. Apart from any comparison with control groups, the scores of Head Start children on cognitive measures fall consistently below the national norms of standardized tests. While the former Head Start enrollees approach the national level on school readiness (measured by the MRT at first grade), their relative standing is considerably less favorable for the tests of language development and scholastic achievement. On the SAT they trail about six-tenths of a year at the second grade and close to a full year at grade three. They lag from seven to nine months and eight to eleven months respectively on the ITPA at first and second grades.
>
> 9. Parents of Head Start children expressed strong approval of the program and its effect on their children. They reported substantial participation in the activities of the centers. Parents of full-year enrollees tended to be slightly better educated but with a slightly lower income than parents of summer enrollees: summer programs enrolled a larger population of white children. (pp. 3-7).

The hue and cry raised by this report has been considerable and, since it was a major report on the overall follow-up effects of Head Start, the amount of attention was deserved, though perhaps not all of the kinds of attention.

Of the major objections to the report, some have been based on people's disappointment that it didn't come out "right," that is it didn't show that Head Start had made major differences in these aspects of the children's lives. In some cases, this was simply wishing the results had not come out as they did. In other cases, people were concerned that this would be considered the only question to be asked regarding Head Start rather than, as the authors had suggested, "the first logical question." It isn't worthwhile to dwell on this one, except to say that the intensity of the disappointment registered demonstrates the tremendous popularity of the program and it may also indicate that people have the belief or knowledge that the program is making a difference in these areas or others for some children. It would be interesting (and useful) to know how widespread is the belief that Head Start is making an important difference in children's lives beyond that demonstrated by the Westinghouse report. It is clear that parents involved perceive it as a helpful program. It may be that it has lost very little of its original theoretical and political appeal.

A second major type of objection refers to the limits of the report. Gray and Klaus have expressed their doubts: "Such lack of results is only to be expected in situations where the bad or inappropriate so cancels out the good that little positive effect can be found, especially if the evaluation is somewhat premature." (1970, p. 922). That is, if there were a few Head Start centers making tremendous differences in children's later achievements in the primary grades, these would not be recognized by a study such as that by Westinghouse. Although they would count toward raising the average overall performance scores presumably, their weight in a large group would be small. It may be that a few centers which were actually causing children to do worse in the primary grades would balance their effects and no general differences would result.

It would indeed be interesting to know to what extent this was, in fact, the phenomenon behind the only slight changes or negative findings in the report. It would be nice to know not only that some centers were strikingly better than others, but also the characteristics of such centers. Many feel that this kind of question is the most fruitful one to ask.

The explanation about why this question was not the first to be asked is much too complicated to discuss here. Suffice it to say that one of the principal reasons that program developers chose to ask the 'summative' question was perceived political pressures. And in addition, there were separate sets of administrations (in OEO, the White House and HEW) influencing 1) what the individual Head Start centers were required to do, 2) what the evaluation questions were going to be, and 3) what decisions were to be made.

In any case, questions about "which kinds of programs are effective for which kinds of children" are other questions, and other studies were designed to answer them.[1] The straightforward question which the Westinghouse group contracted to answer was a valid one. Objections can be legitimately voiced that the study was not as interesting or important or useful as other questions--that it gave no guidance about how to improve Head Start, that it was politically motivated to serve certain administrative purposes, or that the answer could and would be mis-used. But the question which the study

[1] The Head Start "planned variations" experiment, a longitudinal study by the Educational Testing Service on Head Start and non-Head Start children, and several small-scale experimental studies were already planned when the Westinghouse study was conducted.

addressed itself to was one which several segments of the general public and the Congress as well as some administrators of the program felt was most crucial: Are Head Start children doing better in the primary grades than children who did not attend Head Start?

The third type of objection to the Westinghouse report was in regard to the soundness of the research design itself. Serious objections have been raised about sample selection. The first is that the sample of Head Start centers selected were not representative of the Head Start program as a whole. This implies that any conclusions about differences between children who participated and those who did not are limited to only those children actually included in the Westinghouse/Ohio University study sample and cannot be generalized to all Head Start children.

Smith and Bissell (1970) pointed out that a simple random sample of Head Start centers was attempted rather than a stratified random sample which would have represented the national Head Start program in terms of community type, racial composition, etc. Since it is not clear on what dimensions Head Start programs should be stratified, this criticism would not be serious if the investigators had selected a large enough simple random sample and could give reasonable demonstration that no bias had been introduced. The sample was not a large one, however.

Smith and Bissell emphasized especially the seriousness of the bias introduced by rejecting certain centers because of their unwillingness to cooperate and because so few non-Head Start children were available in their areas. This latter reason would tend to exclude Head Start sites in which the whole poverty community was involved in the preschool program--a situation which would be expected to favor positive findings for its children. The control sample of children was probably even less representative of a non-Head Start population than the Head Start sample was of the entire Head Start population.

In any case, it seems fair to conclude that inferences about the effects of the entire Head Start program, made on the basis of effects found in this sample, are not valid. It is not really safe to assume that the Westinghouse report tells us about anything except the differences in performance of the actual sample groups used.

Another criticism is one explained in an article by Campbell and Erlebacher (1970).[1] Their point is that we have no way of knowing that the children in the study who participated in Head Start and the children who did not were equivalent in ability before their preschool experiences. And this would make it impossible to attribute any differences (or lack of differences) found in the primary grades to the effects of the Head Start preschool program.

[1] The article by Campbell and Erlebacher appears with several others on the topic of the Westinghouse/Ohio University report in Volume 3, Disadvantaged Child. A summary article by Sheldon White and discussions of the Campbell and Erlebacher article by Cicerelli and by Evans and Schiller are recommended.

Because of the ex post facto design, the Westinghouse researchers used two procedures which Campbell and Erlebacher argue are unsound. The first is matching. Suppose, they argue, that former non-Head Start children really were, on the average, brighter, more able children than former Head Start children. Then suppose that once the researchers had randomly selected from the Head Start group, they found children from the other group who could be matched with them on age, sex and kindergarten attendance. When the groups were tested for achievement, the non-Head Start group would be expected to outperform the Head Start group because they were more able in the first place.

Even if matching had been done on the basis of pre-test scores of the children in two such groups, Campbell and Erlebacher argue, regression artifacts might explain the effects. That is, suppose some non-Head Start children were found, from this generally superior group, whose pre-test scores matched those of the Head Start participants. If one assumes that preschool experience has no effect, then the post-test scores for the non-Head Start children would be higher than the post-test scores for the Head Start children. That is, the true mean of the non-Head Start population from which these children were drawn to be matched with Head Starters was higher. The post-test scores would lie closer to this mean than did the pre-test scores. And the scores of the Head Start sample would still cluster around their lower means.

Since the Westinghouse/Ohio researchers actually found that the two groups had approximately equivalent scores on primary-grade achievement tests, Campbell and Erlebacher's argument leads to the conclusion that former Head Start participants actually gained more than nonparticipants. Since empirical performance was the same, the Head Start children would have had to gain more relative to their regression-predicted end point, than the non-Head Start children. By this argument Head Start participation can be seen to have had beneficial effects on the primary grade achievement of the more disadvantaged children.

The Westinghouse investigators tried several ways to insure that differences between the groups could be attributed to the effects of the Head Start treatment itself. They used socioeconomic status (SES) as a covariate in their analysis of the results, a statistical means of "equating" the groups so that differences in SES (rather than the Head Start experience) would not be responsible for the results). The groups of children were tested center by center in an analysis of covariance random replications model. But the problem that the Head Start sample might have been drawn from a population with a lower (or higher) general ability (even within SES levels) is not resolved by this technique. Campbell and Erlebacher argue that the factorial structure of SES and achievement are not the same--that using socioeconomic status as the covariate is not even as satisfactory as using pre-test scores.

Perhaps Head Start enabled children to catch up with this group of controls. Perhaps Head Start had a negative effect on the children enrolled. Campbell and Erlebacher felt that socioeconomic status data and sampling biases favored the control group and that therefore the Head Start sample in the Westinghouse/Ohio study was a more disadvantaged one than the control sample. In any case, if the groups were systematically different before the intervention began, we have no way to interpret differences (or no differences) in achievement performance at the end.

The authors of the Westinghouse report acknowledge these facts in several places. They assert that such technical problems with the ex post facto design do not substantially affect the general conclusions to be drawn from the study.

> "We are aware of the possibility of sources of uncontrolled variation in an ex post facto study, of the possibility of bias in sampling, of possible limitations in the statistical analysis and of the experimental nature of the measures of affective development. However, considering the variability of the Head Start population and the size of the sample used in the study, it was determined that the tests of significance used in the main analysis had sufficient power to detect differences of practical relevance as they existed in the overall summer and full-year groups. Even with ample statistical power, no great number of differences were found. And no greater number of significant differences were found with the alternate analyses after the groups were equated on (father's) education, occupation and income per capita." (p. 245).

These answers to the limitations of the statistical analysis do not deal squarely with the possible original differences in ability between the two groups of children or with the possibility that the most effective Head Start programs were left out in the sampling process.

In any case, further statistical refinements on the Westinghouse/Ohio data will not help us interpret its main conclusion.

At this point, one can only make a judgment. Should the findings be discounted because of the technical flaws in the study? That is, since we do not know the effects of regression, sampling bias and violations of statistical assumptions, can we say nothing? Should one simply accept the authors' conclusions because of their experience and close involvement with the subjects and the data collection? Or should one take a middle position, perhaps giving little credence to the exact numerical outcomes of the statistical analyses and assuming that sampling biases operated in unknown degree and direction, and yet not claiming that the findings are entirely meaningless? The judgment depends on one's purpose.

If one takes the last-mentioned approach for the purpose of practical guidance on preshcool policy, it may not be safe to conclude with the authors of the Westinghouse/Ohio report that summer Head Start was less effective than full-year Head Start. While it is reasonable to suppose that the benefits of a year of experience would outlast those of a few months, and while there actually were more significant differences favoring Head Start after the full-year programs, the summer and full-year samples were not from the same population and no direct comparisons were made between the two. Similarly, it may not be appropriate to conclude that full-year Head Start effects on performance were stronger in the first grade than in later grades. Both these two findings and the discovery of certain characteristics of "more effective" programs (in core cities, in southeastern region of U.S., with Negro populations) need direct exploration.

It does seem appropriate to conclude with the Westinghouse/Ohio University researchers that Head Start has been only "marginally effective," on the average in changing primary-grade performance. If we assume that the population of eligible non-Head Start children was initially superior in ability to the Head Start population and that the matching and SES covariance procedures only acted to remove some of the group differences, then permitting children to "catch up" or "stay even" with a superior, non-Head Start population in primary grades seems like quite an achievement for a short-term preschool experience. Getting ahead of such a group, as former full-year Head Starters did on the MRT in first grade and on subtests of the ITPA in second grade, would almost certainly be a practically significant[1] finding under these assumed conditions. But in terms of the major overall evaluative question posed, it does not appear that a Head Start experience gave children enough of a boost that they could be distinguished from other educationally disadvantaged children.

---

[1] While determination of statistical significance is a matter of specific mathematical operations and accepted conventions, determinations of "importance" or "practical significance" is purely a matter of judgment. In the Westinghouse/Ohio report, the authors offer "differences greater than one-half of a standard deviation" as a criterion of practical importance. That is, they suggest that one may wish to call the investment in Head Start programs worthwhile as long as children participating in the program get, for example, a score on the MRT which is 8.4 points higher (half of the standard deviation of 16.8 for the test's normative group) than the children who did not participate. Actual results of the Westinghouse/Ohio study showed Head Starters averaged only 5 points higher on the MRT.

One may wish to accept smaller differences or only larger differences than this as practically significant. It depends on whether one is focused on the improvement achieved already (considering the scale of the program, the obstacles to its implementation) or the distance still to go (considering the resources already involved, the feasibility of program improvement).

Findings from Longitudinal Studies

Achievement Tests

If the results obtained in the Westinghouse study had been extremely different from those obtained in longitudinal studies of preschool programs, we would have a great deal more difficulty understanding them. The findings are, however, generally consistent. If we dismiss the personal-social measurements for the time being[1] and concentrate on academic achievement, most studies show that the former preschool groups are superior upon school entrance, but their superiority over the non-preschool groups diminishes over the primary grades. These are the results in the majority of studies, in which the children are measured in public school settings where there has been no further special compensatory intervention since the preschool experience. For disadvantaged children, school achievement has been observed to decline, relative to norms of performance, as number of years in school increase. This phenomenon, labeled "cumulative deficit" or "progressive retardation" has not, in most cases been arrested. Figure 2 shows a stylized diagram of typical longitudinal findings.

---

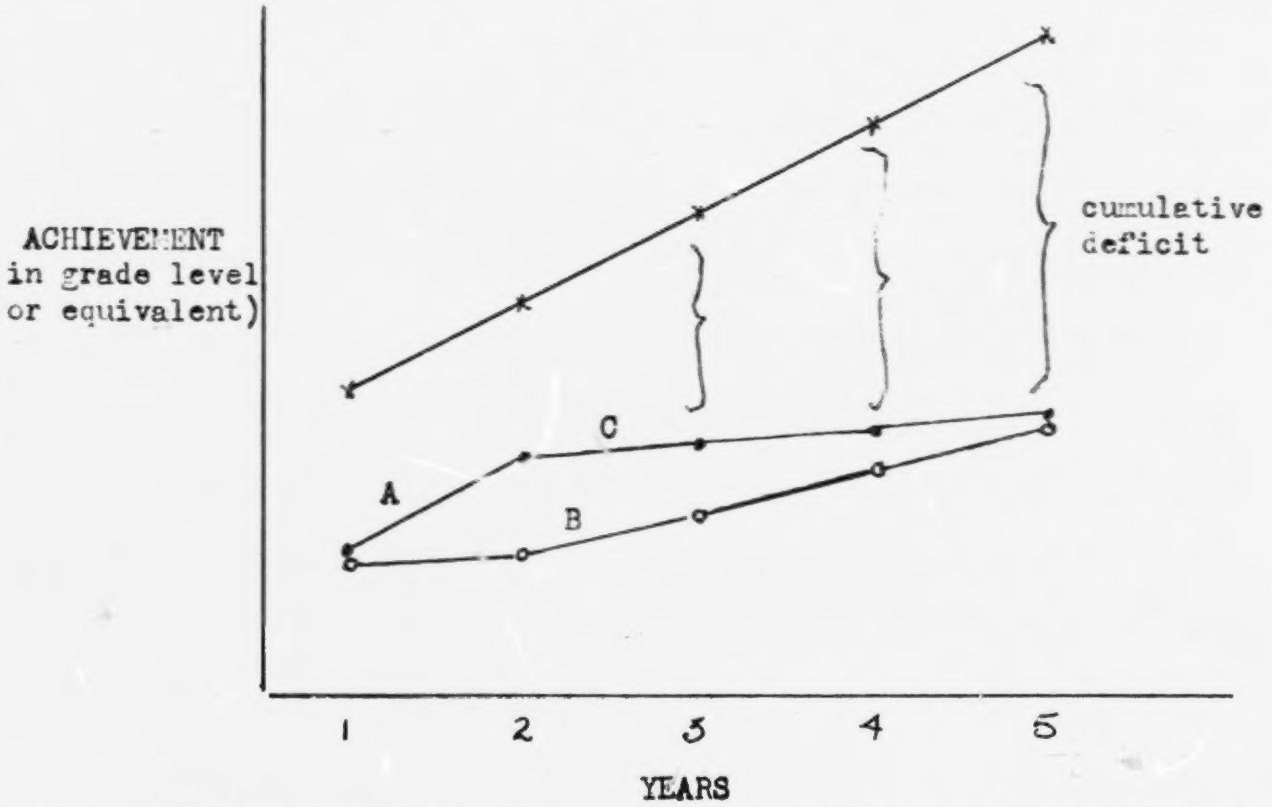
[1] While the Westinghouse/Ohio University report did not find significant differences on emotional and motivational measures between former Head Start participants and non-participants after either summer or full-year programs in first, second or third grades, the fact that the investigators used new measures with unknown reliability and validity makes it difficult to draw conclusions from their data at this time.

Long-run effects of preschool on children's social and emotional development are not well researched. Time pressures made it difficult to include the longitudinal studies of dependency, independence-striving and other personality variables by Dr. Kuno Beller of Temple University. In a personal communication (June 17, 1971) he reported: In children who measured low in autonomous achievement striving, it made a significant difference whether they entered school at nursery, kindergarten or first grade level. Children who had nursery school on the average were elevated in autonomous achievement striving at third grade. The results were extremely complex however. First, for children who originally measured high in autonomous achievement striving, earlier schooling did not make a difference in third grade performance. Children who were high on autonomous achievement striving were also more dependent and more aggressive (dependency and aggression were not correlated).

Beller also reported statistically significant differences in the fourth grade between children with preschooling and those without on Kagan's Impulsivity-Reflectivity scale (boys especially being more impulsive if no early schooling) on a self-image measure (girls having more positive self-images and boys having more critical and realistic self-images with preschool attendance) and on a measure of moral judgment (children who start school later have more primitive moral code).

Another word of caution is advisable on the interpretation of the Westinghouse study in this context. Although the Westinghouse findings are consistent with the generalization about diminishing differences between preschool participants and non-participants, the study was not longitudinal; that is, it did not involve retesting of the same children in first, second and third grades. Thus an equally appropriate interpretation of what the Westinghouse revealed is that, during the years 1965 and 1966 when Head Start was just getting organized, the programs were not as effective in changing children's performance as the 1967 and 1968 programs. In any case, the results were in agreement with those which show more differences in the first grade than in later grades and in fact, the Westinghouse/Ohio researchers examined their data and found there was more effect in the first grade if no kinder-

Figure 2. Schematic trend in achievement over time for three groups of children.



o——o Disadvantaged children with single year of preschool attendance before school entrance at Year 2.

●——● Disadvantaged children without preschool experience who entered public school at Year 2.

x——x Advantaged children with or without preschool experience.

B - "catch up" by non-preschooled group. (B is steeper than C, although B is not generally as steep as A was for the preschooled group).

C - "levelling off" by the preschooled group. (C is generally a shallower slope than A).

"Fade out" can refer to low achievement score relative to expected performance (e.g. grade-level norms) and is thus equivalent to "cumulative deficit" or "progressive retardation." It can also refer to fading of differences between preschooled and non-preschooled groups of disadvantaged children (i.e. "catch up" and "levelling off"). There is almost never an actual decrease in raw achievement test score.

garten year intervened.

DiLorenzo's experiment with prekindergartens in New York was based, like the Westinghouse study, on the notion that "the carry-over effects of the prekindergarten experiences are...critical" in judging the success of the program. On the Metropolitan Readiness Tests at the end of kindergarten, he found that the former prekindergartners were superior to disadvantaged controls[1] on the Metropolitan Achievement Test Primary I Battery. Both groups were, however, still considerably below norms and below middle-class comparison groups in performance.

DiLorenzo only reported on second grade performance for one former prekindergarten group which had shown some superiority over its control group at the end of kindergarten. The difference between the scores of these 27 children and 37 non-prekindergartners in the first grade did no quite reach statistical significance. And by the second grade, there were no detectable differences (on the Upper Primary Reading Battery). The control groups had "caught up" with the children who had attended the prekindergarten program. Results obtained by this New York State group since the publication of the study confirm the disappearance of differences in subsequent groups.

In the Gray and Klaus (1970) Early Training Project, results on the Metropolitan Achievement Test were as follows: "In 1965, at the

[1] Significant differences between experimental (prekindergarten and control (no prekindergarten) groups were due primarily to the girls' scores and were attributable mainly to the few highly teacher-directed programs which emphasized verbalization (Cf. discussion in Chapter Two).

end of the first grade, the experimental children were significantly superior on three of the four tests used at that time: word knowledge, word discrimination, and reading." The arithmetic computation score difference was not significant. "In 1966 (end of second grade) five subtests were given. This time only two were significant, word knowledge and reading." (p. 917). There were no signifcant differences found at the end of fourth grade on any of the subtests given, with the exception that the control group in another town was significantly inferior to the experimental and control groups in the local schools. The test experimental group was performing a year behind grade level norms at the end of the fourth grade. The experimental groups' progress seems to have been slower in the later primary grades than it was between first and second grades, and the rate of achievement did not decrease as much in the control groups as it did in the experimental groups by fourth grade ("catch up" and "levelling off").

The longitudinal results of Hodges, McCandless and Spicker's (1971) first study indicate that no significant achievement differences (as judged by teachers) were present at the end of the intervention period between the experimental kindergarten group of thirteen children. In a second study, more experimental kindergartners (N=16) were placed in first grade compared with the children (N=16) who remained at home, but by the end of first grade the experimental children were not keeping up with their classmates and differences between experimental and control groups were fading.[1]

These less-encouraging results seem to be typical of large-scale publicly-supported preschool programs. Several evaluations of Title-I supported prekindergartens indicated that while preschooled children might have been more "ready" for school at the end of kindergarten, their scores on first grade achievement tests do not differ from non-preschooled children. For most of these large-scale programs and for Head Start, differences noted at the end of preschool have usually disappeared by Spring of the following year.

The subjects in Weikart's longitudinal study of the Ypsilanti Perry Preschool Project (Weikart et al, 1970) provide exceptions to both of the general findings stated above. That is, the difference between the two groups at the third grade increased rather than decreased. For the experimental group as a whole, there was little "levelling off," nor was "catch up" observed in the control group. The difference between groups on the California Achievement Test (total raw score) is significant at the end of the first grade. At the end of the second grade, there is a not-quite-significant difference between former preschoolers and non-preschoolers. At the end of the third grade the difference between the groups is statistically significant (p. $<$ 01). Weikart reports that this is due to the fact that five of the subjects (all girls) in the experimental group are performing near the 50th percentile of the CAT norms while other experimental children and the control children have fallen back to about the eighth percentile. The mean performance of the experimental group is near the 25th percentile.

---

[1] Personal communication with Howard Spicker, Indiana University on March 1, 1971.

Karnes (1969) did not have a group without preschool experience with which to make comparisons and her subjects, on the average, were less disadvantaged than Weikart's (original mean IQ = mid 90's for Karnes' groups; original mean IQ = upper 70's for Weikart's). Nevertheless there was quite a range in IQ's among Karnes' subjects and the children who participated in the Ameliorative program were still performing at grade level (3.77) on the California Reading Achievement Test at the end of third grade. The mean of this group was significantly superior to that of the Traditional preschool group, but those children were also still holding their own just below the grade level norm. Both of the preschooled groups were performing satisfactorily and neither was showing a "cumulative deficit."

Intelligence Tests

In general, the IQ data across these studies were similar to achievement data, in that differences between experimental and control groups grew smaller and disappeared by the third grade. The "catch up" phenomenon was characteristic. That is, the IQ increase in the groups which had not attended preschools was greater during the first year of public school than the IQ increase of the preschooled groups during the same period. While control groups in small experimental studies generally did not obtain as high an IQ score as the experimental groups by the end of the first school year, the experimental groups were "levelling off."

Even in reviewing Head Start research Grotberg (1968) could state that "studies indicate rather uniformly that while Head Start children do not lose what they have gained through their Head Start experience, they tend to level off to a plateau which allows other children to catch up to them." (p. 40).

On the following pages are IQ data from the several experimental longitudinal studies which showed the greatest IQ change in the preschool period. The general trend seems to be that as a result of the special intervention program (as we saw in Chapter 2) the children obtain higher scores than their peers. The IQ scores of the preschooled group are not markedly changed during the first year of public school, and they tend to stabilize or show a gradual drift downward during the primary grades.[1] In most cases, in the third grade, they still score above their original pre-intervention IQ level.

The groups which do not participate in any preschool program show a fairly sharp increase during their first year in public school (whether it be kindergarten or first grade). This brings the IQ scores of the control groups almost to the level of the former preschoolers.

---

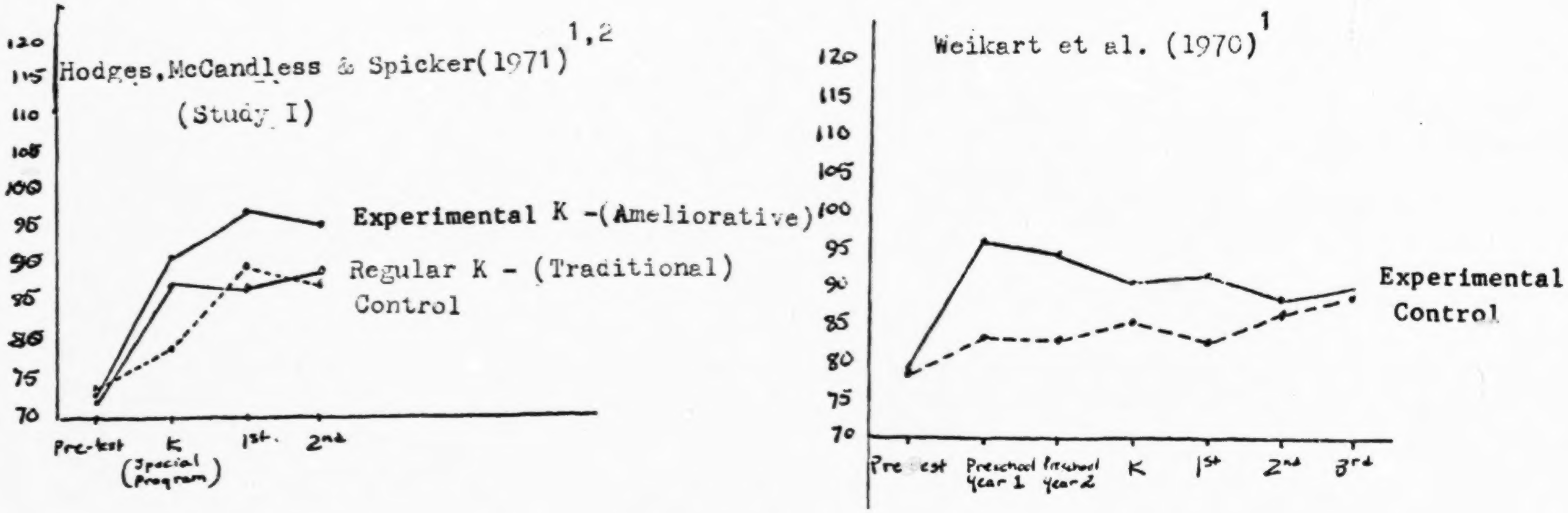
1 The fact that IQ scores decline whereas achievement scores simply increase at a slower rate is a result of the way IQ is computed by dividing mental age by chronological age. Thus a child with an IQ of 100 who failed to gain 12 months mental age during a 12-month period would show an IQ decrease. Mental age would have continued to increase at a slower rate. Losing IQ points does not indicate a loss in mental age.

Statistically significant differences are sometimes found and sometimes not found at the end of the first year of public schooling. Over the primary grades, the IQ scores of both groups change very little and any differences between the groups tend to disappear. At third grade, the mean IQ of both groups is usually slightly above their originally-measured IQ. This suggests that in IQ tests, unlike achievement tests, there is little "progressive retardation" or cumulative deficit" in disadvantaged children, whether they attended a preschool program or not.

The results of the Gray and Klaus study offer some exceptions. The intelligence test scores of the experimental groups tend to decline over time (cumulative deficit).[1] During summer preschool sessions and first grade, the experimental groups were maintained at a level above the control group, and first grade attendance boosted the IQ of the controls. But after first grade the control group's IQ scores declined at a less rapid rate than the experimental groups', such that by the end of the fourth grade, the intelligence test scores (admittedly now testing different abilities in the children) were almost identical to pre-intervention scores in absolute amount as well as in the relative position of the groups. Not shown in Figure 3 is a"distal control" which was a similar group in another town. This comparison group was

[1] Sprigle (Van de Riet et al., 1970) and DiLorenzo (1969) also noted the decline in IQ of the control group before school attendance.

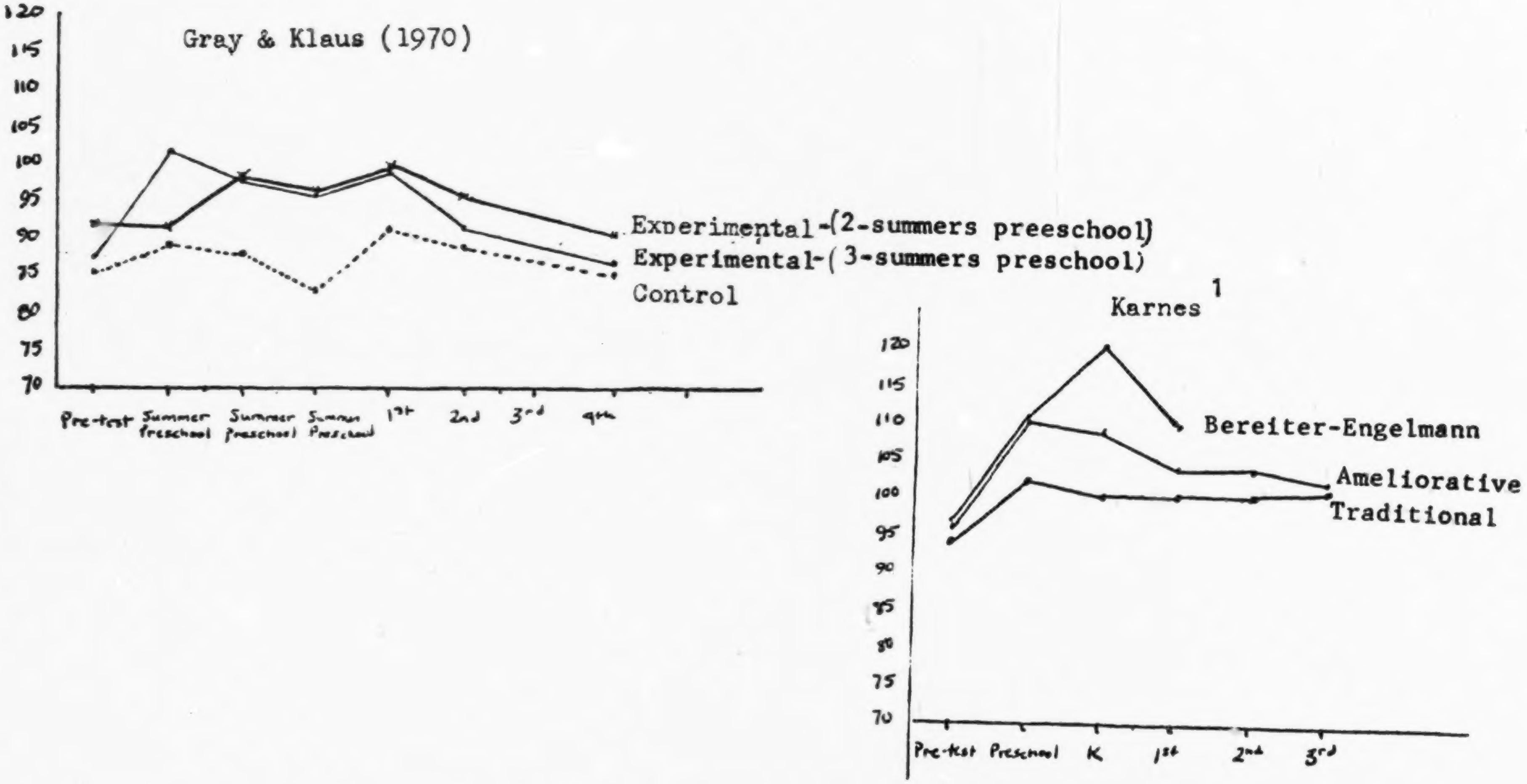
FIGURE 3. Longitudinal Results of Experimental Preschool Intervention on Stanford-Binet Intelligence Scale



1 Children were initially selected as retarded on the basis of Stanford-Binet Intelligence Scale performance.

2 Kindergarten programs are labeled to indicate that there were similarities between treatments in this experiment and those of Karnes' prekindergarten experiment.

FIGURE 3 (Contd.) Longitudinal Results of Experimental Preschool Intervention on Stanford-Binet Intelligence Scale



---

1 Unpublished paper submitted to Office of Child Development, 1971 shows post-third-grade scores of Traditional and Ameliorative groups. Bereiter-Engelmann group (N=10) had two years (preschool and K) in intervention program.

considerably below its initial IQ level by the fourth grade. The relatively slower decline in IQ for the regular, local control group may be attributable to the spread of effect of the experimental intervention (neighborhood contacts during the entire period were numerous and the children were in the same public school classes as the experimental children), but the debilitating effects of the local school and/or home environments were strong nevertheless.

The achievement scores of these four groups correspond with the intelligence test scores. Both show that progressive retardation has not been arrested by intervention. This does not deny the positive effects of the intervention on the children during preschool but it does say that the intervention did not put children in the category of those who are or will be successful in school regardless of the school and home environment.

Discussion

In study after study, preschool attendance--even in centers with the most sophisticated knowledge, personnel and planning--does not make a difference in either achievement or measured intelligence in disadvantaged children by the end of the primary grades.

In order to make policy decisions about preschool programs, it is important to know not only that their effects on the whole have not persisted through the primary grades but also why they have not. Or in the few cases where success has been obtained, why it has. If the results mean that we have not enhanced the mental development of the children enough or that we have not really increased cognitive and emotional abilities which underlie intellectual achievement, then we might consider such things as: 1) not increasing large-scale preschool expenditures until we agree on what is important, find out if it is possible to bring it about, and discover the conditions under which it can be fostered on a large scale, 2) giving the children of certain parents special stimulation from birth or from age one or two years, 3) changing the goal of the program to day care with educational components to keep the children from regressing on the basis of what we now know, and forget the idea of accelerating development to insure children's chances to succeed after age five.

If we get these results of preschool intervention because the school experience doesn't reinforce or, in fact, contravenes the preschool experience, then we might wish to: 1) change the goals, methods and/or content of public school programs, 2) make preschool programs more compatible with existing primary programs, 3) make both the preschool and primary programs plan a sequence of experiences under compatible philosophies.

If we get these results because the home environment fails to reinforce or contravenes the preschool experience, we may wish to 1) bring about more harmony of goals and methods between school and community, 2) remove the children from their homes for longer periods of time, 3) involve the entire community in an educational intervention (parenthood education) or other, (e.g. economic, political) interventions which have effects on child rearing and schooling.

Unfortunately, the studies available at present give us very little information about why the achievement differences between groups were so small relative to the norms, or short-lived, relative to expectations for maintaining public school success. The studies were designed to demonstrate or to find out what would happen if young disadvantaged children were given a stimulating preschool experience. Expectations were high, since there **was** reason to believe that the period before school was more critical than others in the development of a child's basic intelligence, and that with accelerated intellectual development, basic language skills and the motivation to do well in school, the child would achieve at a "normal" rate. The studies were not designed to explain the phenomena which were demonstrated. They did not control or carefully observe the continuing home environment, the classroom interactions in first, second and third grades, the fit between preschool and school content and style. Nor was knowledge yet available about the amount of change in cognitive development or about which cognitive and non-cognitive abilities are most essential for learning to read and do arithmetic in school. All of these factors varied simultaneously.

The answers to the questions now posed must await the next round of studies. But for present guidance we must try to find clues in the studies to date.

Did preschools not enhance development enough?

In the great majority of public preschool programs evaluated the level of intellectual functioning is raised, although the increase is not great. In several small-scale experimental preschool programs, however, IQ and readiness scores are considerably enhanced. The children's performance is in the "normal" range. And yet it may be that this is still not enough of a boost in intellectual or other abilities necessary for a child to function well in school.

It seems logical that if attendance in a preschool program could raise a disadvantaged child's level of intellectual development to a point near that of successful children, he would not have trouble mastering reading, arithmetic and other academic skills, the teacher would be as likely to succeed with him as she would with a youngster who did not come from a disadvantaged family. We have some studies which suggest that when preschool attendance enhances IQ considerably, the probability of children "making it" in school increased.

Data from Karnes et al. (1969) give support to the notion that preschool programs gave an IQ boost to some children whose original IQ scores were fairly low, and that this may have been a factor in their abilities to achieve. In the Ameliorative program especially, some children with IQ scores in the mid-80's to low-90's obtained in preschool and maintained IQ scores nearly at the norm. The achievement test data indicate that all the children in this group were learning to read in first grade and were keeping up in arithmetic. This suggests that if intellectual abilities are raised to a certain minimum level before first grade (undoubtedly a different level for each first grade classroom) the teacher could reach the child and the child could keep up.[1]

The Weikart et al. (1970) study also seems to suggest that a certain minimum IQ level partly explained the fact that some children in their experimental group were "making it" in school. Weikart's program, like one described by Herzog et al. (1971) was more effective with children who had higher IQ's to begin with. And Weikart found that children who were already "naturally" brighter had a better chance of learning reading and arithmetic in the school situation. The study suggested even more strongly that changes brought about by the preschool program, including changes other than IQ, were responsible for increasing children's chances for achievement. The correlation between IQ and achievement was stronger for children who attended preschool than for children who had not. The study concluded that "although an 'innoculation' against further educational difficulties is hardly a burden preschool programming can assume, this effect seems to have occurred in some children. The conclusion seems to be that preschool 'frees' the child from the normally expected relationships

[1] If there had been a control group in this study, however, we might have found that the public schools in this area were also able to work as successfully with disadvantaged children who had no early schooling.

with demographic variables that usually 'determine' academic progress." (pp. 136-137).

However, the fact that those who succeeded were all girls gives us a clue that social interaction with the teacher in the school situation may have been a crucial variable. Most of the children in Weikart's experimental group plus those in several other studies where intellectual development was considerably enhanced (Klaus and Gray, Hodges et al.) were not making any better progress in later primary grades than control groups. Increasing the level of IQ considerably was not sufficient to insure success in school. In addition, it is not clear how much more we could influence in a one- or two-year period preceding school attendance. If the small-scale experimental preschool programs available now are not sufficient to alter significantly the children's chances of learning to read well and do arithmetic, then large-scale public preschool programs without special follow up cannot be expected to do better.

Has preschool changed the wrong things?

Spicker,[1] after examining performance of children in the experimental kindergarten program in Study I and in Study II, felt that the second experimental group displayed achievement superiority more than the first group because there was less of a discrepancy between what the second group had learned in the experimental program and what was offered in the public school first grade. That is, there was more "positive transfer" from the kindergarten to the first grade. The curriculum in the experimental intervention program had been changed after Study I. Language lessons were made to include more specific vocabulary and the content used included traditional school themes such as "community workers" (policemen, firemen) and a unit on "the farm." Also more emphasis was placed on memory practice, number concepts and fine motor development. The first, second and third grades into which both Study I and Study children went were observedto have a great deal of rote learning of computation and reading (flash cards and group recitation). The feeling was that if preschool programs could enhance those skills which most closely approximate those the children would use in the school program, achievement would not show a deficit. The Planned Variations experiment in the Follow Through program[1] should permit us to assess this explanation.

---

[1] In a phone conversation Howard Spicker reported that the Stanford-Binet items missed by the two groups in the Hodges et al study had been examined.

---

[1] The Follow Through program was originally conceived as a follow-up into the primary grades of the gains made by disadvantaged children in Head Start. It is administered by the U.S. Office of Education. Follow Through, serving poor children in schools all over the country, consists of parent participation, nutritional and medical services, educational programs and some other "life support" services during the primary grades. Although the philosophy of the program emphasizes individualization of instruction, the curriculum is not necessarily coordinated with the particular Head Start Program or other experience the children may have had before school entrance. A "Planned Variations" experiment with several different specially-designed model Follow Through programs is now being conducted. Some of these primary grade model programs mesh directly with Head Start model programs. Others serve children in classes where at least 50% of the children have had some kind of Head Start program. The effects of different model programs and different preschool-primary sequences are being evaluated.

Karnes (1969) noted that the children in the Bereiter-Engelmann curriculum group lost eleven IQ points in the first year of public school practices. She attributed this loss to the discrepancy between preschool and school practices. She did not expand on what was inappropriate: the material the children knew, the style of learning, or both.

Because it was a loss in IQ points, the Bereiter-Engelmann phenomenon has also been viewed as follows: In this "structured-informational" preschool program, as opposed to a "structured-cognitive" program,[1] the children had not changed in their ways of thinking or in their level of cognitive functioning but rather in the amount of information (including information relevant to the IQ test) they had acquired and retained. The IQ drop would reflect a drop in retention. A little support for this view comes from Karnes et al. (1969) that the children from the Ameliorative and Bereiter-Engelmann programs did equally well on readiness and early achievement tests, except on items which required comprehension.[2] On these items involving understanding the Bereiter-Engelmann (Direct Verbal) group did not perform as well. Unfortunately, there are no achievement data over the primary grades yet for a substantial group of children from this program. Nor have longitudinal results appeared from several programs based on teaching generalizable cognitive habits and problem solving abilities rather than specific skills (e.g. Nimnicht, Gilkeson, Adkins).

---

[1] A distinction made by Bissell (1970) between programs whose objectives are to develop cognitive processes or styles (struct.-cogn.) and those designed to teach certain content, information or cognitive products (struct.-informational).

[2] Earlier high scores reported by Bereiter (1967) on achievement were on the Wide Range Achievement Tests which involve rote memory rather than reason and comprehension.

From the range of preschool programs teaching various competencies that have been evaluated over a period of time (e.g. Klaus and Gray, Weikart et al.) it appears that making a disadvantaged child more like his advantaged peer in several ways or exposing him to materials he will encounter in the first school grades, is not sufficient to guarantee normal rates of achievement.

Did the schools "fail the children?

Except in some cases (e.g. Gray and Klaus, 1970), the IQ seems to have been raised by preschool program and sustained--though not further enhanced--in the school. In addition, there have been significant positive changes on measures of general development and school readiness such as the Preschool Inventory. There has been some continuity of the effects of preschool on level of development, then. As we have seen, this has not meant that achievement was forthcoming. Where a higher level and rate of achievement might ordinarily be expected from a group of children with higher mental ability, this is not what we generally find when comparing the preschooled children with those who did not have a preschool program experience.

Datta (1969), after reviewing Head Start follow-up evaluation studies and some of the same longitudinal studies reviewed here, summarized the several hypotheses regarding factors in the school situation which may explain why the school did not further enhance children's development:

> 1. Class Norms. Since the teacher is primarily interested in the progress of the whole class, she must set the level of class activities below that necessary to challenge the more advanced Head Start children (or, perhaps, above the level of all the disadvantaged children, whether former preschoolers or not) and give more attention to the group of children who are less advanced (or more). Some evidence in support of this hypothesis is the finding (Wolff & Stein, 1967) that when 50% or more of the class had attended Head Start, the rate of gains was maintained, while when 25% or less of the class had attended Head Start, the differences were most likely to disappear.
>
> 2. Peer Group Influence. The presence of more advanced Head Start children in a classroom may stimulate the development of non - Head Start children. Conversely, it is also possible that the Head Start children who can do many things feel less competitive pressure from their disadvantaged peers to develop new skills and abilities.
>
> 3. Factors in the School System. It may be naive to expect a child to continue to progress rapidly in a classroom where the teacher may be responsible for thirty or more children, may be primarily concerned with maintaining order and perhaps convinced that most of her students have little potential; and the demanding, active and inquisitive Head Start children may suffer more in this situation than non-Head Start children (Hyman and Kliman, 1967). A less extreme version of this interpretation is that the low-income child and his family require a different kind of program than that typically found in the school. It may be that when the child is provided over a period of time with the necessary attention from teachers who are adequately trained and equipped with materials oriented to his needs and when he and his family continue to receive services such as those provided in the Head Start program, he will continue to accelerate developmentally (p. 14, parenthetical notes added, except for references).

Similar "possible explanations" were advanced for the longitudinal data in the small-scale experimental programs. It is possible, for example, that the major differences between Karnes' achievement data and those of Gray and Klaus were due to differences between the schools (the expectations of the classroom teacher, the degree to which instruction was individualized, the portion of disadvantaged children per class, etc.) in the Illinois town and in the Tennessee town. Observations of the classroom situation and the day-to-day activities of the children were not included in these studies, so it is not possible to determine what factors in the school situation may have led to "catch up" and "levelling off" in IQ and achievement.

For those who saw the goal of preschool programs as insuring "normal" progress in school achievement (no matter what school), blaming the schools for failing to foster achievement may not seem justified. However if the question is not whether schools contribute most to the failure but rather whether changes in the school could yield the successful result, then Follow-Through and such experimental programs as that of Springle (Van de Riet, 1970) will be useful. Sprigle's program is designed so that nursery school, kindergarten and first grade (to date) form a continuous sequence of skill and attitude acquisition. The group in this program continues to excell a control group by a wide margin.

Unlike the hypotheses regarding the possibility that preschool did not change intellectual functioning enough, the hypotheses that 1) the schools are not arranged to foster further development or teach academic skills to the disadvantaged or 2) preschool and school programs are not cocordinated, appear to leave more room for positive action. This is certainly the assumption on which the Follow Through program is based. While a report of findings is not yet available, preliminary results indicate that if children have a Head Start experience and enter a school with a Follow Through program, they do better (in kindergarten and first grade) than if they had entered a school without a Follow Through program. The same is true of disadvantaged children who have no Head Start experience. That is, they also achieve better if they attend a school with a Follow Through program. In addition, children with both Head Start and Follow Through perform better than children with only the Head Start experience and no special compensatory program in school. Such findings suggest that changes can be made in the school situation itself to increase the likelihood of disadvantaged children's success and that coordinating the preschool and first school experiences will increase children's chances of continued achievement.

The practical applicability of such statistically significant findings is not clear, however. Many compensatory education programs have been tried in the schools already, with somewhat disappointing results (Jensen, 1969; Gordon and Jablonsky, 1967). The Coleman study (1966) and others have been interpreted as showing that characteristics of the school (e.g. teacher/pupil ratio, per pupil expenditure) are irrelevant to children's achievement and that home factors or hereditary capacities account for most of the variance in achievement. Attempts to study other school factors, besides those included in the

Coleman report, (e.g. school culture, individualization of instruction) plus the findings from the "Planned Variations" studies in Head Start and Follow Through may make it clear how much influence changes in the school can feasibly exert on the achievement of disadvantaged children.

Is the home environment responsible for the fact that preschoolers do not maintain their advantage over non-preschoolers through the primary grades?

This question appears tautological when we realize that the home environment was once blamed for the original problem. But now it seems clearer that the immediate home environments which were seen as the locus of the problem were changed and did benefit children over the short run. Experimental preschools and Head Start centers were effective in changing family life patterns and/or compensating for inappropriate home stimulation, such that the children did progress and learn and grow during the program.

However, the more global or distal (from the child) environment--the society itself--was not significantly altered. The family has little reason or support for maintaining changes it may have made in feelings of environmental control, expectation levels for their child, relations with school or social service authorities. If changes in the family which supported the child's development become artificial or maladaptive, they are dropped.

The child's inability to maintain a superior rate of progress throughout the primary grades could be due to incompatibility of demands in the home and school environments (assuming, here, that school pressures were favorable to the child's achievement). Without continued outside intervention, the peer pressures, neighborhood expectations of low academic achievement and eventual employment (if any) outside of the mainstream, and continued racial discrimination may begin to influence the direction of the child's development more heavily. Again, research to date has not documented events in the home environment or their continuing effects on the children during the primary grades.

Studies of the effects on disadvantaged children of positive changes in the community as a whole, such as those brought about through Head Start or other social and economic programs, are few and inconclusive. A few, such as Gilmer, Miller and Gray's provide some evidence that the family and community environment can be changed enough in the interest of children's development that the children's educational success is somewhat more likely. But rather significant changes in this larger environment seem to be necessary for the effects of disadvantaged children's success to be of practical significance. In a review of many studies, Stein and Susser (1970) pointed out that both "the greatest deterioration and the most sustained improvements (in mental development) have been produced by total exposure to a new residential environment." (p. 64). That environments have profound effects over periods of time also seems to be the message of the Skeels (1966) study, when we view it from our more experienced perspective.

The more we try to decide whether the preschool program did not enhance development enough, whether the school experience did not build on the advances made in the preschool on promoting happiness, intellectual development, academic skills, social responsibility, etc. would, of course, be most useful. This would enable us once we had carefully determined the goals (minimal levels of school achievement? productive employment in adult society? well rounded, individually developed five and six year-olds?) to find the factors (combinations of preschool, school family and social institutions) which could be most effectively offered to accomplish that end.

CHAPTER SIX

SUMMARY

> If a modern leader doesn't know the facts he is in grave trouble, but rarely do the facts provide unqualified guidance.[1]

PURPOSE

This report, commissioned by the Office of Child Development, U.S. Department of Health, Education and Welfare, is an examination of the written evidence on the effects of preschool programs on disadvantaged children and their families. The findings of hundreds of recent studies were reviewed to determine what kind of justification theyprovide for continued support of Head Start, Title I and Title III (ESEA) prekindergartens, state-wide early childhood education programs or other publicly-funded preschool programs.

The Head Start and Elementary Secondary Education Act (ESEA) preschool programs, both federally financed (though administered differently through local and State agencies), have been reaching about 530,000 children of low-income families or neighborhoods yearly. Two major state-supported prekindergarten programs in California and New York together involve about 30,000 children beyond those in Head Start

---

1 Gardner, John "The Anti-leadership Vaccine" The Annual Report of the Carnegie Corporation, 1965, p. 8.

and ESEA programs. Many of the forty-two states which permit and (usually) support kindergarten programs for five-year-old children are now launching prekindergarten efforts or feasibility and planning studies. The advocacy of groups such as the Committee for Economic Development, the National Education Association, the American Federation of Teachers and the Regents of the State University of New York for providing one or two years of public schooling before the present kindergarten year, at least for disadvantaged children, also calls for an examination of the results of pre-primary programs to date.

FINDINGS

Immediate effects on cognitive, social and emotional development.

Public preschool programs have been successful in changing intellectual and social behavior of disadvantaged children in positive directions over the short run. Evaluations have showed that while disadvantaged children attending preschools do not generally reach the standardized test norms or the performance levels of middle-class comparison groups in general intellectual abilities, they are superior at the end of the preschool period to disadvantaged children who did not attend preschool programs.

Small-scale, expertly-staffed experimental preschool programs have yielded much more striking improvements in measured intellectual abilities than the large-scale programs--sometimes producing above-average IQ scores on standardized tests. Characteristics shared by several programs which boosted intelligence test performance considerably were: 1) a clearly specified set of goals and intellectual skill objectives which staff members could use to guide daily activities, 2) a highly trained, well-organized supervisory and teaching staff, all devoted to producing noticeable intellectual growth in the children, 3) understanding by the mothers of program purposes and often enlistment of mothers as teachers in the classroom and home, 4) individual time spent with each child and some program activities tailored for each child, 5) heavy use of language by adults in the classroom and encouragement of children's verbal expression. It is not known, however, which of these variables is necessary or critical for bringing out which intellectual abilities in which children.

The possibility of short-run positive change in specific cognitive and perceptual skills has also been demonstrated by small-scale experiments. Several different language lesson sequences as short as 15 minutes daily (Bereiter & Engelmann, Karnes, Blank, Edwards & Stern, Reid & Adkins) have produced marked improvement in performance on the Illinois Test of Psycholinguistic Abilities, which measures both receptive and expressive language abilities in young children.

There are fewer tested educational techniques available in other areas than language for advancing specific skills in preschoolers, although various types of existing preschool programs exhibit a specificity of effect. Montessori programs, for example, which emphasize sensory acuity and provide many activities requiring practice in fine discriminations, often show specific positive effects on children's sensory and perceptual performance. There is less certainty about the extent to which preschool programs have been able to promote positive effects in cognitive processes, such as persistence in tasks, independence striving or autonomy in problem solving, curiosity, self-confidence or delay of gratification.

Uncertainty about effects on children's social and emotional development stems not only from the paucity of reliable measurement but also from lack of consensus about what constitutes positive change.[1] For example, a child may be considered to have benefited greatly from a Head Start program if he is no longer withdrawn and silent but speaks up spontaneously, moves about and makes contact with the teacher and other children. On the other hand, if he is rated in social adjustment by a first grade teacher who maintains a quiet and orderly class, he may be seen as having made an inadequate adjustment. The case of social behavior or readiness for school is not nearly so confusing as the case of emotional development. There are many social behaviors on which there is agreement. Findings show that on such things as adjusting to classroom routines, learning self-care skills, learning to play

[1] We have not yet precisely defined or agreed on measures of such things as tolerance of frustration, self-perception, dependency conflict. We do not have enough normative studies which tell us in what ways children are "naturally" developing at this age, nor longitudinal studies which tell us how early traits relate to adult characteristics. And we do not have agreement on educational or developmental goals (i.e. is the child with the highest frustration tolerance with the perception of himself as most strong and powerful and with the lowest dependency conflict the "best" child?).

and share with other children, following teachers' instructions, etc. *children with a preschool experience generally have an advantage over children without such experience as they enter the formal school*.

In the area of emotional development we have rarely detected reliably the changes in young children's feelings of competence, dependency, frustration tolerance, etc. even as a result of carefully-controlled programs with specific objectives for the children's emotional development.

Health and nutrition

There are few evaluations of change in children's immediate or long-range nutritional or general health status attributable to preschool services. Of those preschool programs which include health and nutrition components, only Head Start even has records of services provided. For these records, *widespread immediate good effects on the children due to the feeding program, medical treatments and dental services can be presumed. Some longer-range benefits can also be presumed to result from fluoridation, immunizations and those few parental health education programs which were intensive*.

Insofar as similarly effective services were provided to children in Title I and other preschool programs, we can conclude that there were benefits to health similar to those resulting from Head Start programs.

It may or may not seem appropriate to expect that Title I or Head Start preschools would also provide an environmental safety, sanitation and health program in the children's communities to insure long-range healthy physical growth and development. In any case, there were few activities of this scope in preschool programs which could be expected to have major impact on future healthy development. Head Start provided the only known exceptions in that, in some communities staff and parent groups had influence in changing the health service institutions (hospitals, mental health clinics, etc.) so that they provided more benefits to poor communities.

Effects on Families

Evaluations of recent preschool programs for the disadvantaged have not generally included assessment of the impact on the family of having one or more young children in a group educational setting outside the home. Only a few have included assessment of parental attitude change, and these were usually measures of attitudes toward the preschool or toward school in general. Results of these measures were almost universally positive. Since preschool programs are aimed primarily at the young child, minimal evaluation of effects on other family members is perhaps to be expected. The Head Start program is unique in this respect since, as a part of the anti-poverty program, enhanced parental responsibility, dignity and understanding of children were included in its goals. Head Start programs have encouraged parental participation 1) through community action, including directing Head Start centers and managing Head Start activities, 2) through employment as preschool center staff and training as child care workers, 3) through volunteer work and participation as home educators. In some programs, the entire range of parental involvement was encouraged, sometime in combination with the provision of direct social services for the entire family.

While something is known about the actual amount of parental participation in managing Head Start programs, and the broader forms of community action, the effects of this kind of involvement on the parents and their children is not known. One can perhaps persume some of the good effects from the many favorable anecdotal reports and from evidence (e.g. Kirschner report) that Head Start groups made changes in the schools, hospitals and other institutions, including the national Head Start program, which increased benefits to the poor. But most effects of "parent power" or "maximum feasible participation," for the worse as well as for the better, for the poor as well as for the society in general, remain undocumented.

Participation of poor parents as paid staff in preschool programs has obvious financial benefits for the family. In addition, direct involvement with the young children produced many positive changes in the attitude of the adults toward themselves as well as toward their young children. Changed feelings of their own competence plus changes in child-rearing practices then presumably had positive effects also on the children of employed staff, volunteers or staff in training. Effects on parents--almost all mothers--employed or trained in the preschool programs, have not been followed up however. Available studies do not deal with the duration of changes or with related changes in marital role, care of older children, employment status or other familial effects which one might expect to be associated with participation by the parent and her child in a preschool program.

Because even those preschool programs without specific goals for the parents themselves often assume that parental understanding and cooperation is necessary to insure the program's effectiveness with the children, parents' voluntary participation is widely solicited. And more is known about the effects of such participation activities. The studies have showed that intensive parental involvement in the child's preschool learning has positive effects on the child's performance. Several programs in which the mother was trained as a home teacher with specific activities for her to use with her child have proved effective in promoting the child's learning, the mother's feelings of childrearing competence and, in at least one group of mothers studied, the intellectual level of the younger siblings of the preschool-age children. Participation of the parents in workshops and meetings at preschool centers has not been shown to make reliable changes in parents' attitudes about themselves and their own situations, but measures almost always indicate positive feelings toward the preschool program and positive changes in attitude toward school.

Continuity of gains without further intervention.

The principal finding regarding the longer-range effects of preschool programs on children is that after several years in regular public school there are no significant differences in the academic achievement of disadvantaged children who have and have not had a special preschool experience. Usually by the end of the first grade, rate of gain in the preschooled group levels off and non-preschooled children show an increased rate of gain or "catch up." By third grade few differences are detected in either intelligence or achievement.[1]

The very few exceptions to this finding may be due to 1) exceptional preschool programs which boosted the children's intellectual development and other characteristics appropriate to achieving in school without further intervention and/or 2) school programs which followed the preschool experience and were suitable for building on the gains the children had made and teaching them academic skills, and/or 3) home environments, including perhaps the expectations in the whole community, which changed enough to reinforce gains made by the children in the preschool program and to encourage their academic achievement.

Critical review of the findings would not lead to optimism about our ability to change any one of these three factors (home preschool or school) sufficiently to guarantee "normal" rates of achievement in young disadvantaged children, but there is some evidence that if it were feasible to change them simultaneously, chances of children's sustained success would increase.

[1] Few other characteristics have been examined for differences, principally because reliable short-run differences between preschooled and non-preschooled groups were not obtained. Ryan (OCD, in press) finds somewhat more evidence of longer-range change in examining reports of seven longitudinal studies of preschool intervention.

DISCUSSION

What do these findings tell us about justification for continuing, expanding or terminating support for preschool programs? Justification depends partly on whether programs have a reasonable chance of solving the problems they were supposed to solve or reaching the goals set for them. Herein lie several major problems. First, there has not been agreement on the goal or the priority among several goals for each program. Second, poor criteria and measurements have been chosen to demonstrate achievement of the goals. Third, evidence gathered is often insufficient to reveal the degree of progress toward any of the goals.[1] In spite of these problems, we have some indications regarding the success and lack of success of preschool programs.

Let us now be specific. If one assumes, with many of the proponents of Head Start (especially under the aegis of OEO) and some compensatory education programs that preschools are the key to "break-ing the cycle of poverty," then it is clear that we have neither developed adequate criteria of success nor collected information appropriate to evaluate it. A long-run criterion might be that more children who attended preschools than comparable children who had not would be above a certain income level in adulthood. Naturally, we do not yet have evidence on this. Nor are there plans to collect such evidence later. If one then assumes intermediate criteria of advanced development, academic success[1] or family change, we have little information, and what we have is not positive. We know that on some intellectual and social skills, disadvantaged preschoolers are at an advantage to non-preschoolers before they enter first grade. But advantages on some of the same characteristics can no longer be detected by age nine.[2] We have no reason to suppose the children who have attended preschool programs will be more able adults than they would have been without such programs. We do not know how the economic status of the families has been changed (nor do we even have good descriptions of most activities conducted to effect such changes). We have no adequate data to estimate the extent to which even the comprehensive Head Start programs have contributed to the confidence or power of minorities, changes in welfare practices, decreases in education and job discrimination or other trends which might conceivably aid in reducing poverty.

---

[1] These problems are most clearly elucidated by David K. Cohen, 1970, in an article entitled "Politics and Research" The Evaluation of Large-scale Social Action programs." Cohen asserts that the salient goals of legislation (Economic Opportunity Act, Elementary and Secondary Education Act) authorizing such social action programs as Head Start and Title I kindergartens and prekindergartens are "changes in the relative status of economic and racial groups within the society," changes in positions of power and allocation of finances among local, state, and federal authorities, public and private educational institutions, etc. He suggests that current criteria of "successful" programs and the measurement of direct effects on children's intelligence and achievement or families' attitudes are not appropriate to evaluate these "real" goals which are redistributions of economic and social status. Thus almost no evidence has been gathered regarding our accomplishment of goals.

---

[1] It is not clear that any causal relations exist between successful early performance in academic areas and later economic success.

[2] Ryan (in press) emphasizes the advantages that are found to endure, more than the "catch up" in other characteristics. The difference in emphasis in part reflects the uncertainties in interpreting findings from the current literature.

For some, the goal of Title I or other compensatory programs is "equalization of educational opportunity" which generally means that we compensate children from poor environments with special educational, health and social services so that they can start out on an equal footing with more advantaged children. That is, in preschool programs, we give unequal treatment based on income in order to equalize the opportunity to take advantage of public education. The criterion used to measure "equal opportunity," however, is equality of performance by disadvantaged children and middle-class, mainstream cultural comparison groups. One can certainly question the goal of making children equal, especially without further specification of the characteristics on which equality is important. And one can question "opportunity" being measured in terms of performance.[1]

In any case, when we look at the short-run results of larger-scale public programs, we do not find evidence that disadvantaged children were as well-prepared or ready to take advantage of public school programs as middle-class children, although they appeared to be better prepared than their low-income counterparts. In the several instances where advantaged and disadvantaged children both attended a preschool program, the gap in their abilities remained the same or grew larger.

[1] If by "equality of opportunity" one meant that each child be given equal access to public education and equal individual attention in learning, one would avoid the danger of efficiently reaching the criterion of equal performance by holding back the bright children and depriving the rich children. This definition of "equal opportunity" meaning "individualization" would probably lead to greater rather than fewer differences among children's performances. However, differences in performance would no longer be so heavily determined by socioeconomic background.

There were some exceptional, small-scale programs in which the disadvantaged group was above average on IQ tests and school readiness measures at the end of preschool; they had seemingly achieved success by the criterion used to measure it. The fact that even these children fell behind in the classroom situation raises doubts about the adequacy of the criterion and the goal in terms of preparation for the regular public schools.

Those who feel that preschool programs should prepare disadvantaged children to "make it," i.e. learn to read, write and do arithmetic, in school are disappointed. The evidence is plain that without follow-up into the primary grades, even small-scale experimental programs have not been able to attain this goal by means of one or two-year interventions. The failure of disadvantaged children who attend preschools to learn these primary grade skills[1] may be attributable to the nature of the preschool program, the school program, the home environment and/or to the lack of coordination among these factors during this period. Nevertheless, it is obvious that simply a year's experience in any preschool program does not significantly change the position of disadvantaged children in terms of later school learning.

Those who were most knowledgable and realistic at the outset felt that programs of early intervention could enhance the development of children and remove some of the disadvantages with which low-income families and their children were burdened before school entrance. The

[1] Assuming children have no brain damage or other physical/organic handicapping condition.

original Head Start planning group, for example, listed the following goals:

---Improving the child's physical health and abilities
---Encouraging self-confidence, spontaneity, curisoity and self-discipline
---Increasing the child's capacity to relate posivitely to others while strengthening his family's ability to relate positively to him and to understand his problems
---Developing in the child and his family a responsible attitude toward society and creating opportunities to work together to improve social conditions
---Helping the child and his family to an increased sense of dignity and self-worth.

In those preschool programs which include health and nutritional programs, children benefited especially in the short-run. Improvement in the understanding of the child by his parents and improvement in the parents' own feelings of competence in child-rearing results from preschool participation, at least in some Head Start and small-scale experimental programs. Changes in other attitudes go unmeasured or are assumed to depend more heavily on changes in the larger community than on participation in preschool programs. But within the Head Start program, there were actual documented cases of community improvements resulting from actions of the participants.

The level of sophistication in theory, program and measurement of social and emotional development is not yet such that changes can be reliably detected in "self-confidence, spontaneity, curiosity and self-discipline." However, on the abilities for which we have accessible and reliable measuring devices--intelligence, general information and school readiness--disadvantaged children who attended preschool programs were nearly always advanced when compared with disadvantaged children who experienced no special change in their situation during the same period.

While evaluations of Head Start, Title I and III kindergartens and prekindergartens and small-scale experimental programs have often been inappropriate to their special goals, and while many of the changes attempted in each program still go unmeasured, we can conclude that these preschool programs can and do promote growth and development in disadvantaged children.

Does the probability of achieving this last goal provide justification for continuation or for expansion of support to new programs? Does it mean, as several organizations have advocated, that we should strive to have formal preschool education for all children from the age of three or four? There are those[1] who argue that because we have the know-how to foster the development of children in preschool programs we ought to have such programs, at least for disadvantaged children. This seems most unrealistic.

Justification is only partly a matter of whether this goal is attainable. It goes beyond the facts and into such questions as "Who will endorse public expenditure for such a goal?" And what are the costs? What are the alternatives for investing the same money and other resources? What long-range social changes are likely to result? Will

[1] Battele Memorial Institute for State of Ohio, see McFadden (1969).

responsibility for child-rearing fall more heavily on the State and less on the family? Are such results desirable?

The decision to terminate any preschool program runs into similar considerations. Social, political and economic factors as well as facts about effects on children and their families must be faced by those deciding to reduce support. To assist in such decisions, the present report provides only current findings regarding effects and a strong suggestion to examine one's goals at all levels precisely.

Nevertheless, it is certainly plain that anyone who advocates adding a prior year to the present school program (without at least radically altering the nature of the school programs which follow) and believes that he will have a significant positive impact on children's long-range development is deceiving himself and others.

On the other hand, there was a time when institutional or group care was considered necessarily harmful for young children (due to separation from mother, etc.). We have learned from these recent experiences that group care programs can be conducted without having noticeable negative effects on young children. There is reason to believe that growth and development in preschool-age children might sometimes even be enhanced while in institutional or day care centers. This is important information at a time when reforms in the welfare system (e.g. the President's Family Assistance Plan which includes work incentives for adult recipients of aid and day care for the children of working mothers), the growing desire on the part of women to contribute financially and intellectually as well as in homemaking roles (i.e. Women's Lib), and the platforms of various groups (e.g. White House Conference on Children, National Welfare Rights Organization) all increase the pressure for group day care of children.

Perhaps publicly-supported preschool programs will be justified as models for research and reform--their new goal to improve many existing institutions. Certainly, unless we pursue the still unanswered questions about effective health and educational practices, appropriate roles for family members, and the nature of young children's emotional and social growth, preschool-age children might find themselves in situations where they are forgotten and ignored by parents, the rest of the community or the whole of society.

REFERENCES*

Adkins, Dorothy and Reid, Ian Preliminary Evaluation of a Language Curriculum for Preschool Children Head Start Evaluation and Research Center, University of Hawaii, Final Report to O.E.O., 1967

Alexander, Theron Changing Mental Ability of Children in the City Child Development Research and Evaluation Center for Head Start, Temple University, Annual Report 1968 (ED 030 487).

Allen, James G. Impact of the Family as a Primary Group Upon the Child in a Head Start Preschool Project Head Start Evaluation and Research Center, University of Hawaii, Annual Report 1966-67.

Alpern, Gerald D. and Levitt, Eugene E. "Methodological Considerations in Devising Head Start Program Evaluations" Indiana University, Paper presented at Society for Research and Child Development meeting, 1967, (ED 025 319).

Anderson, Scarvia and Temp, George Project Head Start - Summer 1966 Final Report (Section 3, Pupils and Programs), Educational Testing Service, Princeton, 1967 (ED 018 248).

Banta, Thomas J. "Testing for the Evaluation of Early Childhood Education: The Cincinnati Autonomy Test Battery (CATB)" in J. Hellmuth (Ed.) Cognitive Studies Vol. I, Special Child Publications, Seattle 1968.

Baratz, S. and Baratz, J. "Early Childhood Intervention: The Social Science Base of Institutional Racism" Harvard Educational Review 40, (1) 1970.

Bee, H.L. "Parent-Child Interaction and Distractibility in 9-year-old Children" Merrill-Palmer Quarterly Vol. 13, 1967, p. 175-90.

Beller, E. Kuno "The Evaluation of Effects of Early Educational Intervention on Intellectual and Social Development of Lower-class Disadvantaged Children" in E. Grotberg (Ed.) Critical Issues in Research Related to Disadvantaged Children Educational Testing Service, Princeton, 1969.

---

*Numbers at the end of some references are order numbers for the articles. Those articles for which ED precedes the number can be obtained from the ERIC Document Reproduction Center, 4936 Fairmont Avenue, Bethesda, Maryland, 20014.

Bereiter, Carl Acceleration of Intellectual Development in Early Childhood University of Illinois, Urbana, Final Report to U.S.O.E., 1967.

Bereiter, Carl and Engelmann, S. Teaching Disadvantaged Children in the Preschool Prentice-Hall, Englewood Cliffs, N.J., 1966.

(Bereiter and Engelmann) Academic Preschool, Champaign, Illinois "It Works" series, Preschool Programs in Compensatory Education I, U.S.O.E., 1969 (OE 37041).

Berger, Barbara A Longitudinal Investigation of Montessori and Traditional Prekindergarten Training with Inner City Children: Comparative Assessment of Learning Outcomes. Three Part Study. Center for Urban Education, New York, 1969 (ED 034 588).

Biber, Barbara "Goals and Methods in a Preschool Program for Disadvantaged Children" Children Vol. 17, 1970 p. 15-20.

Birch, Herbert G. "Research Issues in Child Health IV: Some Philosophic and Methodological Issues" in E. Grotberg (Ed.) Critical Issues in Research Related to Disadvantaged Children Educational Testing Service, Princeton, 1969.

Birch, Herbert G. and Gussow, Joan Dye Disadvantaged Children--Health, Nutrition and School Failure Harcourt, Brace and World - Grune and Stratton, New York, 1970.

Bissel, Joan S. The Cognitive Effects of Preschool Programs for Disadvantaged Children. Unpublished doctoral dissertation, Harvard University, 1970.

Blank, Marion Cognitive Gains in"Deprived" Children through Individual Teaching of Language for Abstract Thinking Albert Einstein College, N.Y., 1967 (ED 019 346).

Blank, Marion and Solomon, Frances "A Tutorial Language Program to Develop Abstract Thinking in Socially Disadvantaged Preschool Children" Child Development Vol. 39, No. 2, 1968, p. 379-89.

Bloom, Benjamin S. "Early Learning in the Home" First B.J. Paley Lecture, University of California, Los Angeles, 1965, (ED 019 127).

Bloom, Benjamin S. Stability and Change in Human Characteristics John Wiley & Sons Inc., N.Y., 1964.

Boger, R. "Motivational and Social Components in Compensatory Education Programs: Suggested Principles, Practices and Research Designs" in E. Grotberg (Ed.) Critical Issues in Research Related to Disadvantaged Children Educational Testing Service, Princeton, 1969.

Brazziel, W. F. and Terrell M. "An Experiment in the Development of Readiness in a Culturally Disadvantaged Group of First Grade Children" Journal of Negro Education Vol. 31, 1962, p. 4-7.

Brown, Bert R. Assessment of Self-Concept Among Four-Year-Old Negro and White Children Mimeo Report, Institute for Developmental Studies, N.Y., 1966.

Bruner, J. "Poverty and Childhood" Speech for Annual Citation Award of the Merrill-Palmer Institute, Detroit, Michigan, 1970.

Butler, Annie L. Current Research in Early Childhood Education: a compilation and analysis for program planners, American Association of Elementary-Kindergarten-Nursery Education, Washington, D.C., 1970.

Campbell, D. T. and Erlebacher, A. "How Regression Artifacts in Quasi-experimental Evaluation Can Mistakenly Make Compensatory Education Look Harmful" in J. Hellmuth Disadvantaged Child Vol. 3, N. Y., 1970, p. 185-211.

Carpenter, Thomas R. and Busse, Thomas V. "Development of Self-Concept in Negro and While Welfare Children" Child Development Vol. 40, No. 3, 1969, p. 935-39.

Chittenden, T., Tanaka, M. and Bussis A. Educational Testing Service, 1970.

Clasen, Robert E., Spear, Jo Ellen, and Tamaro, Michael P. Education Research Vol. 62, No. 2, 1969, p. 401-05.

Cohen, David K. Politics and Research: The Evaluation of Large-Scale Social Action Programs in Education" Review of Educational Research, 40, (2) 1970, pps. 213-238.

Coleman, J.S. and others Equality of Educational Opportunity U.S.O.E., Department of Health, Education and Welfare, 1966.

Concannon, Sister Josephina An Experimental Study of the Influence of Individual vs. Group Instruction on Spatial Abilities in Preschool Children Boston College, Final Report to U.S.O.E., 1966.

Connors, C. Keith and Waller, David A. A Follow-up Study of Intelligence Changes in Children Who Participated in Head Start John Hopkins University, Baltimore, Md., 1966, (ED 020 786).

Crowell, D. G. and Fargo, J. Development of Verbal Abilities in Head Start Children Head Start Evaluation and Research Center, University of Hawaii, Annual Report 1966-67.

Curtis, C.A., and Berzonsky, M.D. Preschool and Primary Education Project Council for Human Services, Commonwealth of Pennsylvania, Harrisburg, Pennsylvania, 1967.

Datta, Lois-ellin "A Report on Evaluation Studies of Project Head Start" Paper presented at meetings of American Psychological Association, 1969, (Office of Child Development, Department of Health, Education and Welfare, Washington, D.C. 20201).

Datta, Lois-ellin "Head Start's Influence on Community Change" Children 1970.

Deutsch, Martin "The Disadvantaged Child and the Learning Process" in A. Henry Passon (Ed.) Education in Depressed Areas Teachers College Publication, Columbia University, N.Y. 1963.

Deutsch, Martin and Brown, Bert "Social Influences in Negro-White Intelligence Differences" Journal of Social Issues Vol. 20, No. 2, 1964, p. 24-35.

Deutsch, Martin Annual Report: Institute for Developmental Studies Department of Psychiatry, N. Y. Medical College, N. Y., 1965.

Deutsch, Martin and others Institute for Developmental Studies Interim Progress Report Part II: Research and Evaluation, N. Y. University, 1968, (ED 036 312).

(Deutsch, Martin) Early Education Project, New York City "It Works" series, Preschool Program in Compensatory Education I, U.S.O.E., 1969, (OE 37027).

Di Lorenzo, Louis T. Prekindergarten Programs for Disadvantaged Children N. Y. State Education Department, Albany, Final Report to U.S.O.E., 1969 (ED 038 460).

Dittman, Laura L. and others A Study of Selected Children in Head Start Institute for Child Study, College of Education, University of Maryland, for Stanford Research Institute, 1970.

Dreyer, Albert S. and Rigler, David "Cognitive Performance in Montessori and Nursery School Children" Journal of Educational Research Vol. 62, No. 9, 1969, p. 411-16.

Education of the Disadvantaged: An Evaluative Report on Title I Elementary and Secondary Education Act of 1965, Fiscal Year 1968 U.S.O.E., Department of Health, Education and Welfare, U.S. Government Printing Office, Washington, D.C., 1970 (HE5.237:37013-68).

Edwards, Joseph and Stern, Carolyn "A Comparison of Three Intervention Programs with Disadvantaged Preschool Children" in Head Start Research and Evaluation Center Final Report 1968-69 University of California, Los Angeles, Report to O.E.O., 1969.

Fleege, Urban H., Black, Michael and Rackausas, H. Montessori Preschool Education, Final Report U.S.O.E., 1967,(ED 017 320).

Fresno, California, Preschool Program "It Works" Series, Preschool Program in Compensatory Education I, U.S.O.E., 1969, (OE-37034).

Garfunkel, Frank Preschool Education and Poverty: The Distance in Between Head Start Evaluation and Research Center, Boston University, Interventional Program Final Report to O.E.O., 1970.

Gilmer, Barbara B. Intra-Family Diffusion of Selected Cognitive Skills as a Function of Educational Stimulation DARCEE Papers and Reports, Vol. 3, No. 1, Peabody College, Nashville, Tenn., 1969 (ED 037 233).

Gilmer, Barbara, Miller, James O., and Gray, Susan W. Intervention with Mothers and Young Children: A Study of Intra-Family Effects DARCEE Papers and Reports, Vol. 4, No. 11, Peabody College, Nashville, Tenn., 1970.

Gordon, Edmund W. "Problems in the Assessment of Intermediate Range Effects of Head Start Programs" Papers presented at the Educational Testing Service, 1968, (ED 037 502).

Gordon, Edmund W. and Jablonsky, Adelaide Compensatory Education in the Equalization of Educational Opportunity Report to U.S. Commission on Civil Rights, Yeshiva University, N. Y., 1967, (ED 013 863).

Gordon, Ira A Parent Education Approach to Provision of Early Stimulation for the Culturally Disadvantaged University of Florida, Gainsville, 1967, (ED 017 339).

Gordon, Ira Child Stimulation Through Parent Education Institute for the Development of Human Resources, University of Florida, Gainsville, Final Report to Children's Bureau, Department of Health, Education and Welfare, 1969, (ED 033 912).

Gordon, Ira Parent Involvement in Compensatory Education University of Illinois Press, Urbana, 1969 (252 00115-X).

Gray, Susan W. "Selected Longitudinal Studies of Compensatory Education: A Look from the Inside" American Psychological Association Paper for Symposium: The Effectiveness of Compensatory Education Programs in the Early Years, 1969

Gray, Susan W. and Klaus, Rupert A. "An Experimental Preschool Program for Culturally Deprived Children" Child Development Vol. 36, No. 4, 1965, p. 887-98.

Gray, Susan W., Klaus, Ruper A., Miller, James O., and Forrester, B. J. Before First Grade Teachers College Press, Columbia University, N. Y. 1966.

Gray, Susan W. and Klaus, Ruper A. Deprivation, Development and Diffusion DARCEE Papers and Reports Vol. I, No. 1, Peabody College, Nashville, Tenn., 1966.

Gray, Susan W. and Klaus, Rupert A. "The Early Training Project: A Seventh Year Report" Child Development Vol. 41, No. 4, 1970, p. 908-24.

Greenberg, Polly The Devil Has Slippery Shoes, Macmillan, N.Y., 1969.

Gussow, Joan Dye "Bodies, Brains and Poverty: Poor Children and the Schools" IRCD Bulletin Vol VI, No. 3 Teachers College, Columbia University, 1970.

Harding, John A. A Comparative Study of Various Project Head Start Programs Cornell, Ithaca, N.Y., 1966. (ED 019-987).

Harned, B.J. Relationships among the Federally-sponsored Nursery Schools of the 1930's, the Federally-sponsored Day Care Programs of the 1940's and Project Head Start Unpublished doctoral dissertation, Rutgers University, 1968.

Hawkridge, David G., Chalupsky, Albert B., Roberts, A. Oscar H. A Study of Selected Exemplary Programs for the Education of Disadvantaged Children. American Institute for Research, Palo Alto, California Final Report to U.S.O.E. Parts I, II, Palo Alto, California, 1968. (ED 023 776, ED 023 777).

Hawkridge, David G., Campeau, P.L., DeWitt, K.M. and Trickett, P.K. A Study of Further Exemplary Programs for the Education of Disadvantaged Children American Institute for Research, Palo Alto, California, Final Report to U.S.O.E., 1969, (ED 036 668).

Hayes, Ruth G. An Exploration of Environmental Factors Influencing a Child's Motivation for Learning Unpublished doctoral dissertation Catholic University, Washington, D.C., 1968.

Head Start--A Community Action Program Office of Economic Opportunity, U.S. Government Printing Office, Washington, D.C., 1968 (0-298-418).

Herman, Hannah and Adkins, Dorothy C. Final Report: Head Start Evaluation 1968-69 Head Start Evaluation and Research Center, University of Hawaii, 1970.

Herzog, E. et al. Unpublished follow-up of Washington, D.C. preschool program submitted to Office of Child Development, 1971

Hess, Robert D. "Parental Behavior and Children's School Achievement Implications for Head Start" in E. Grotberg (Ed.) Critical Issues in Research Related to Disadvantaged Children Educational Testing Service Princeton, 1969.

Hyman, F.A., and Kliman, D.S. "First Grade Readiness of Children who have had Summer Head Start Program" The Training School Bulletin, 63, American Institute for Mental Studies, Vineland, N.J., 1967, p. 163-167.

Hodges, Walter, McCandless, B.R., and Spicker, Howard The Development and Evaluation of a Diagnostically Based Curriculum for Preschool Psycho-socially Deprived Children Final Report to U.S.O.E., Washington, D.C., 1967.

(Hodges, McCandless and Spicker) Diagnostically Based Curriculum, Bloomington, Indiana "It Works" series, Preschool Program in Compensatory Education, U.S.O.E. 1969 (OE 37024).

Hodges, Walter, and Spicker, Howard "The Effects of Preschool Experience on Culturally Deprived Children" in W. Hartup and N. Smothergill (Eds.) The Young Child - Reviews of Research NAEYC, Washington, D.C. 1967.

Holt, John How Children Learn Dell Publishing Co., Inc. New York, 1964.

Horowitz, Frances and Rosenfeld, Howard Comparative Studies of a Group of Head Start and a Group of Non-Head Start Preschool Children Department of Human Development and Family Life, University of Kansas, 1966 (ED 015 013).

Hunter, Gertrude "Health Care Through Head Start" Children Vol. 17 No. 4, 1970, p. 149-53.

Jensen, Arthur "Learning Ability in Retarded, Average, and Gifted Children" Merrill-Palmer Quarterly Vol. 9, No. 2, 1963.

Jensen, Arthur "Learning in the Preschool Years" in W. Hartup and N. Smothergill The Young Child, Reviews of Research NAEYC, Washington, D.C., 1967.

Jensen, Arthur "How Much Can We Boost IQ and Scholastic Achievement?" Harvard Educational Review Vol. 69, 1969, p. 1-123.

Jensen, J. and Kohlberg, L. Report of a Research and Demonstration Project for Culturally Disadvantaged Children in the Ancona Montessori School Ancona Montessori School, Chicago, 1966, (ED 105 014).

Kagan, J. and Moss, H.H. Birth to Maturity, Wiley, New York, 1962.

Kagan, J., Rosman, B.L., Kay, D., Albert J., and Phillips, W., "Information Processing in the Child: Significance of Analytic and Reflective Attitudes" Psychological Monographs Vol. 78, (1, Serial No. 578), 1964, p. 37.

Karnes, Merle, B. Teska, James A., Hodgins, Audrey S., and Badger, E.D., "Educational Intervention at Home by Mothers of Disadvantaged Infants" Child Development Vol 41, No. 4, 1970, p. 925-35.

Karnes, M.B., Teska, J.A., Hodgins, A.S., and Badger, E.D., "Educational Intervention at Home by Mothers of Disadvantaged Infants" Paper presented at AERA meetings, 1970, (ED 039 944).

Karnes, Merle B., Wollersheem, Janet, P., Stoneburner, Robert L., Hodgins, Audrey, Teska, James A. "An Evaluation of Two Preschool Programs for Disadvantaged Children: A Traditional and a Highly Structured Experimental Preschool" Exceptional Children 1968, p. 667-76

Karnes, Merle B. and others Research and Development Program on Preschool Disadvantaged Children University of Illinois, Urbana, Final Report to U.S.O.E., Vol. I, 1969.

(Karnes, M.) The Ameliorative Preschool Program, Champaign, Illinois, "It Works" series, Preschool Program in Compensatory Education, U.S.O.E. 1969, (OE 37054).

Katz, Lilian "Early Childhood Education as a Discipline" Young Children 1970.

Kershner, Keith M. Pennsylvania Preschool and Primary Education Project 1968-69 Final Report to Ford Foundation, State Board of Education, 1969, (ED 033 759).

Kirk, S.A. Early Education of the Mentally Retarded University of Illinois Press, Urbana, 1958.

Kirschner Associates, Inc., A National Survey of the Impacts of Head Start Centers on Community Institutions Prepared for Project Head Start, Office of Child Development, U.S. Department of Health, Education and Welfare, 1970.

Klaus, Rupert A. and Gray, Susan W. "The Early Training Project for Disadvantaged Children: A Report after Five Years" "Monograph of the Society for Research in Child Development Vol. 33 (4, Serial No. 120) 1968.

Kohl, Herbert 36 Children The New American Library, N.Y., 1967.

Kohlberg, Lawrence "The Montessori Approach to Cultural Deprivation: A Cognitive Development Interpretation and Some Research Findings" in R. Hess and R. Bear (Eds.) Preschool Education, Theory, Research and Action Chicago, 1968.

Kohlbert, Lawrence and Mayer, Rochelle S. Preschool Research and Preschool Educational Objectives: A Critique and a Proposal Unpublished manuscript, Harvard University, 1971.

Kohlberg, L., and Jensen, J. "Assessment of a Montessori Approach" Paper presented at Annual Meeting of AERA, N.Y., 1967.

Kounin, J.S. "An Analysis of Teachers' Managerial Techniques" Psychology in the Schools Vol. 4, 1967, p. 221-27.

Kozol, Jonathan Death at an Early Age Houghton Mifflin, N.Y., 1967

Kraft, I., Fuschillo, J. and Herzog, E. Prelude to School: an Evaluation of an Inner-City Preschool Program, Children's Bureau Research Report No. 3, 1968.

Kugel, Robert B., and Parsons, Mabel H. *Children of Deprivation: Changing the Course of Family Retardation* Children's Bureau, U.S. Department of Health, Education and Welfare, U.S. Government Printing Office, 1967.

Labov, W. "The Logic of Non-standard English" *Georgetown Monograph Series on Language and Linguistics* No. 22, 1969.

Levenstein, P. "Cognitive Growth in Preschoolers Through Stimulation of Verbal Interaction with Mother" Paper presented at 46th Annual Meeting of the American Orthopsychiatric Association, N.Y., 1969

Lewis, Hylan "Child-rearing among Low Income Families" in L. Ferman (Ed.) *Poverty in America* University of Michigan Press, An Arbor, 1965.

Liebow, Elliot *Tally's Corner* Little, Brown and Company, Boston, 1967.

Light, R.J. and Smith, P.V. "Choosing a Future: Strategies for Designing and Evaluating New Programs" *Harvard Educational Review*, Vol. 40 (1) 1970, p. 1-28.

Los Angeles City Schools "Evaluation ESEA Title I, 1969-70" Technical Reports, 1970.

McCarthy, Janet Lee Gorrell *Changing Parent Attitudes and Improving Language and Intellectual Abilities of Culturally Disadvantaged 4-Year-Old Children Through Parent Involvement* Unpublished doctoral dissertation, Indiana University, Bloomington, 1968, (ED 027 942).

McFadden, Dennis N. *Final Report on Preschool Education to Ohio Department of Education*, Battele Memorial Institute, Columbus, Ohio, 1969.

Medical Consultant's Evaluation of Head Start Health Services (CAP-HS Form 48) For the 1968 Summer Head Start Programs Prepared for the American Academy of Pediatrics by Thomas F. Sullivan and Lawrence Leist, Biodynamics, Inc., Cambridge, Massachusetts, 1968.

Miller, James O. "Intervention Research with Young Disadvantaged Children and their Parents" *Research, Change and Social Responsibility: An Illustrative Model from Early Education* DARCEE Papers and Reports, Vol. 2, No. 3, 1967.

Miller, James O. *Review of Selected Intervention Research with Young Children* ERIC Clearinghouse on Early Childhood Education, Urbana, Illinois, 1968 (ED 027 091).

Miller, Louise B. and Dyer, Jean L. Experimental Variation of Head Start Curricula: A Comparison of Current Approaches Child Development Laboratory, University of Louisville, Annual Progress Report to O.E.O., 1970.

Minuchin, Patricia, Biber, Barbara, Shapiro, Edna, and Zimiles, Herbert The Psychological Impact of School Experience: A Comparative Study of Nine-year-Old Children in Contrasting Schools, Basic Books, N.Y., 1969.

Montessori, Maria The Montessori Method: Scientific Pedagogy as Applied to Child Education in "The Children's House": With Additions and Revisions Anne E. George (Transl.) Frederick Stokes, N.Y., 1912

Moynihan, Daniel P. Maximum Feasible Misunderstanding Free Press, N.Y., 1969.

Nimnicht, Meier and McAfee Research on the New Nursery School: Interim Report Colorado State College, Greeley, 1967 (ED 027076).

Nimnicht, Glen P. Overview of a Responsive Program for Young Children Unpublished manuscript from Far West Regional Laboratory for Educational Research and Development, Claremont Hotel, Berkeley, California, 1970.

North, A. Frederick "Pediatric Care in Project Head Start" in J. Hellmuth (Ed.) Disadvantaged Child Vol. II: Head Start and Early Intervention Special Child Publications, Seattle, 1968.

North, A. Frederick "Project Head Start and the Pediatrician" Clinical Pediatrics Vol. 6, No. 4, 1967.

Oakland, California, The Preschool Program "It Works" series, Preschool Program in Compensatory Education I, U.S.O.E., 1969 (OE 37057).

Palmer, Francis H. "Early Intellective Training and School Performance" Summary of N.I.H. Grant #HD 02253, 1968 (ED 025 324).

Payne, James S. An Investigation of the Effect of a Training Program Designed to Teach Parents How to Teach their own Head Start Children Unpublished doctoral dissertation, University of Kansas, 1970.

Pierce-Jones, John S., Freidman, Thomas and Barron, William E. "Outcomes of individual and Programmatic Variations Among Project Head Start Centers 1965: O.E.O. Contract 508, 1965.

Pittsburg Public School "Primary Program Report" Pittsburg, Pa. 1968 (ED 027 072).

Project Head Start 1968: The Development of a Program Barbara Bates (Ed.), Office of Child Development, U.S. Department of Health, Education & Welfare, 1970.

Project Head Start 1965-67: A Descriptive Report of Programs Barbara Bates (Ed.), U.S. Department of Health, Education and Welfare, 1968.

Project Head Start 1968: A Descriptive Report of Programs and Participants Office of Child Development, U.S. Department of Health, Education and Welfare, 1970.

Reidford, Philip and Berzonsky, Michael Field Test of an Academically Oriented Preschool Curriculum 1967, (ED 015 839)

Rusk, Bruce A. An Evaluation of a Six Week Head Start Program Using an Academically Oriented Curriculum: Canton, 1967 Canton, Ohio, Public Schools, 1968, (ED 026 114).

Schaefer, Earl S. and Bayley, Nancy "Material behavior, child behavior and their intercorrelations from infancy through adolescence" Monographs of the Society for Research in Child Development 1963, 28 (No. 3, Serial No. 87).

Schaefer, Earl S. "Need for Early and Continuing Education" Paper presented at the Annual Meeting of AAAS, 1969.

Schaefer, Earl S. and Aaronson, May "Infant Education Project: Implementation and Implications of a Home Tutoring Program" in Ronald K. Parker (Ed.) Conceptualizations of Preschool Curricula, 1971.

Schoggen, Maxine "Studies of Imprint of the Low-income Home on Young Children" Research Change and Social Responsibility: An Illustrative Model from Early Education DARCEE Papers and Reports, Vol. 2, No. 3, Peabody College, Nashville, Tennessee, 1967.

Schwartz, Sydney L. Expanded Prekindergarten Program, Evaluation of New York City Title I Educational Projects 1966-67 Center for Urban Education, 1967, (ED 019 115).

Sears, P.S. and Dowley, E.M. "Research on Teaching in the Nursery School" in N. L. Gage (Ed.) Handbook of Research on Teaching Rand McNally, Chicago, 1963.

Shantz, Carolyn U. and Sigel, Irving E. Logical Operations and Concepts of Conservation in Children: A Training Study Merrill-Palmer Institute, Detroit, Michigan, Final Report to U.S.O.W., 1967.

Sigel, I. and Olmstead, P. Modification of Cognitive Skills Among Lower-class Negro Children: A Follow-up Training Study Head Start Evaluation and Research Center, Merrill-Palmer Institute, Michigan State University, Final Report to O.E.O. 1968, (ED 030 480).

Skeels, Harold M. "Adult Status of Children with Contrasting Early Life Experiences: A Follow-up Study" Monographs of the Society for Research in Child Development Vol. 31 (No. 3, Serial No. 105) Chicago, University of Chicago Press, 1966, p. 65.

Smith, Marshall S. and Bissell, Joan S. "Report Analysis: The Impact of Head Start" Harvard Editorial Review Vol. 40, No. 1, 1970, p.51-104.

Soar, Robert S. "The Nature of Effective Teaching for Young Disadvantaged Children" Paper presented at Pediatrics Seminar, College of Medicine, University of Florida, January 1971.

Soares, Anthony T. and Soares, Louise M. "Comparative Study of Self-perceptions of Disadvantaged Children in Elementary and Secondary Schools" Proceedings of the 77th Annual Convention of APA 1969.

Sontag, Marvin, Sella, Adina P., and Thorndike, Robert L. "The Effect of Head Start Training on the Cognitive Growth of Disadvantaged Children" Journal of Educational Research Vol. 62, No. 9, 1969, p. 387-89.

(Sprigle, H.A.) Learning to Learn Program, Jacksonville, Florida "It Works" series, Preschool Program in Compensatory Education I, U.S.O.E., 1969, (OE 37056).

Spicker, Howard H., Hodges, Walter L., and McCandless, Boyd R. "A Diagnostically Based Curriculum for Psycho-socially Deprived Preschool, Mentally Retarded Children, Interim Report" Exceptional Children Vol. 33, 1966, p. 215-20.

Skin, Zena and Susser, Mervyn "Mutability of Intelligence and Epidemiology of Mild Mental Retardation" Review of Educational Research 40 (1), 1970, p. 29-67.

Stern, Carolyn, Marshall, June and Edwards, Joseph "Increasing The Effectiveness of Parents-as-Teachers" University of California at Los Angeles, Paper presented at meetings of American Educational Research Association, 1969.

A Survey of Dental Services in Project Head Start, Summer 1967 Division of Dental Health, Public Health Service, NIH, Bethesda, Maryland, prepared for O.E.O. 1969.

Swift, Joan W. "Effects of Early Group Experience: The Nursery School and Day Nursery" in M.L. Hoffman and L.W. Hoffman (Eds.) Review of Child Development Research Vol. I, Russell-Sage Foundation, N.Y., 1964, p. 249-88.

Van De Riet, Vernon, Van De Riet, Hani and Sprigle, Herbert "The Effectiveness of a New Sequential Learning Program with Culturally Disadvantaged Preschool Children" Journal of School Psychology Vol. 7, No. 3, 1968, p. 5-15.

Van De Riet, Vernon, Van De Riet, Hani and Resnick, Michael A Sequential Approach to Early Childhood and Elementary Education, Phase II Report to Office of Child Development, 1970.

Wagner, Marsden G. "Research Issues in Child Health III: Some Socio-anthropologic and Organizational Issues" in E. Grotberg (Ed.) Critical Issues in Research Related to Disadvantaged Children Educational Testing Service, Princeton, 1969.

Wagner, Muriel G. Nutrition and Mental Development Research Report No. 5 Head Start Education and Research Center, Merrill-Palmer Institute, Michigan State University, 1969, (ED 037 252).

Weikart, David P. (Ed.) Preschool Intervention: Preliminary Report of the Perry Preschool Project Campus Publishers, Ann Arbor, Mich. 1967.

Weikart, David P. "Comparative Study of Three Preschool Curricula" Paper presented at biennial meeting of SRCD, Santa Monica, California, 1969.

Weikart, David P. The Ypsilanti Preschool Curriculum Development Project 1968-1971 High-Scope Educational Research Foundation, Ypsilanti, 1971.

Weikart, D.P., Deloria, D.J., Lawser, S.A. and Weigerink, R. Longitudinal Results of the Ypsilanti Perry Preschool Project Vol. II High-Scope Educational Research Foundation, Final Report to U.S.O.E., 1970.

Weikart, David P. and Lambie, D.Z. "Preschool Intervention through a Home Teaching Project" in J. Hellmuth The Disadvantaged Child, Vol. II Bruner-Mozel, N.Y., 1969.

Westinghouse Learning Corporation The Impact of Head Start, an Evaluation of the Effect of Head Start on Children's Cognitive and Affective Development: Vol. I, Text and Appendices A-E Ohio University Report to O.E.O., Clearinghouse for Federal Scientific and Technical Information, 1969.

Wilmon, Betty "Parent Participation as a Factor in the Effectiveness of Head Start Programs" Journal of Educational Research Vol. 62, No. 9, 1969, p. 406-08.

Wolff, Max and Stein, Annie "Study I: Six Months Later. A comparison of children who had Head Start Summer 1965, with their classmates in kindergarten" and "Study II: Factors influencing the recruitment of children into the Head Start program, Summer 1965." Yeshiva University, New York, August 1966.

Zigler, Edward F. "Raising the Quality of Children's Lives" Children Vol. 17, 1970, p. 166-70.

Zigler, E. and Butterfield, E.C. "Motivational Aspects of Changes in IQ Test Performance of Culturally Deprived Nursery School Children" Child Development Vol. 39, 1968, p. 1-4.

Zimiles, Herbert "Has Evaluation Failed Compensatory Education?" in J. Hellmuth (Ed.) Disadvantaged Child Vol. 3, Compensatory Education A National Debate Brunner-Mazel, N.Y., 1970

U. S. GOVERNMENT PRINTING OFFICE : 1971 O - 450-909